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WEAPONS, ARMY ORGANISATION, AND POLITICAL MAXIMS

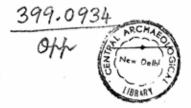
46936 ANCIENT HINDUS,

WITH SPECIAL REFERENCE TO GUNPOWDER AND FIREARMS.

BY

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PREFACE

While pursuing my researches into ancient Indian history I lighted upon two ancient Sanskrit manuscripts containing interesting information on many new and important topics.

One of them, the Nītiprakāsikā, has been, I believe, up to now, utterly unknown, and the other, the Śukranīti, though known to exist, has never been properly described and published.

The Nitiprakasika is ascribed to Vaisampayana and gives among other valuable matter a full account of the Dhanurveda. It contains in fact the only accurate description which we possess of the various arms and war implements of the ancient Hindus. I esteemed it therefore proper to give as many passages as possible in full, though well aware I run the risk of thing the reader by a long enumeration of weapons.

cervice) to maths Ameter Knowed - Mound Carled . Ballo : 31- 14 18:15 ...

The chapter taken out of the Sukraniti, on the other hand, abounds with useful and interesting information, all the more worthy of being communicated, as it enters into subjects connected with war and politics from a truly Indian standpoint, which may perhaps command additional attention now that a war is being waged within the north-western boundaries of ancient India.

The organisation of the ancient Indian armies is well and clearly described in its outlines; the division of the army into a veteran reserve and young line-troops is remarkable. The same can be said of the laws according to which war ought to be conducted. The maxims of the Dharmayuddha recall to our memory the laws of chivalry existing during

the Middle-ages, and the former like the latter seem only to have been followed when it appeared convenient to do so; for some of the most renowned Indian heroes, as Rama and Kṛṣṇa, are credited with having stooped at times to mean and treacherous acts, in order to gain victory. In recent times we have witnessed a revival of this humane feeling, in the outcry which was raised against explosive bullets and in the Geneva Convention, which was instituted to mitigate the horrors of war.

It is of peculiar interest that the statements found in these two ancient works tally with the few remarks on Indian army organisation which we glean from the fragments of ancient Greek and Roman writers.

The Nītiprakāšikā and the Śukranīti, while testifying to a high civilisation prevailing in ancient India, cast also some light on the recension of such works as the Mahābhārata and the Mānayadharmašāstra.

The difficult and intricate question about the ancient home of gunpowder and firearms, I trust to have finally settled.

I may close with the remark that this book should only be considered as an occasional offshoot of my studies in Indian history, and as nothing more.

GUSTAV OPPERT.

MADRAS, 23rd August 1880.

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ON THE WEAPONS, ARMY ORGANISATION AND POLITICAL MAXIMS OF THE ANCIENT HINDUS, WITH SPECIAL REFERENCE TO GUNPOWDER AND FIREARMS

CHAPTER L

ON THE WEAPONS AND WAR IMPLEMENTS OF THE ANCIENT HINDUS.

Our knowledge of the history of the ancient Hindus is very limited, and there is not much hope of our becoming better informed, as the most important factor for providing such knowledge, i.e., a historical literature or a sufficient number of authentic records is not existing in India, in fact seems never to have existed. While we possess ample material to reconstruct to some extent the history of the ancient Egyptians, Assyrians, Hebrews, Persians or Greeks, the Hindus have left us no sufficiently trustworthy records of the past, to enable us to do the same with respect to Indian history, that has been done to the history of other ancient nations.

The combined influences of climate, geographical position, political circumstances, education, religious belief, and habit have conspired to destroy any taste for historical researches, even if such had existed formerly. Internecine wars, all the more cruelly conducted, as they severed the links of previous relationship and friendship, either undertaken for the sake of

political or religious supremacy, and continual invasions of foreigners unsettling entirely all domestic affairs and civic arrangements could not excite so great an interest as to be remembered with care and committed to posterity by recording them. Nobody likes to remember saddening occurrences, and a few bright spots excepted, the political history of India reveals one of the most dismal pictures of human existence.

Moreover the exalted position in the social ladder which a Brahman occupies in his own estimation, does not induce him to interest himself in the worldly fate of others. Every Brahman regards himself as a descendant of one of the great divine sages, and obtains, if pious, final beatitude through this descent. To ensure it he has to remember and to revere the memory of his three immediate predecessors—father, grandfather, and great-grandfather; and, as every previous ancestor has observed the same practice, he is in his mind certain of his ultimate prosperity. Why should he, therefore, engage himself in the investigation of a subject in which he is not interested and which can confer on him no benefit?

The subject of Indian history is a very difficult one, not only from the absence of trustworthy ancient records, but also from the necessity—and in this respect it resembles all Asiatic history—that the historian should be an Orientalist. Historical science is strictly allied to, and dependent on, philological science, and without a knowledge of the mother tongue of a nation, or, at all events of the languages in which the original and most important sources of its history are recorded, no person is competent to undertake to write the history of a nation, for, being unable to read the original records himself, first, he is notable to judge them critically; and, secondly, it is beyond his power to detect any mistakes made by translators. Were all reports true and all translations correct, the drudgery and anxiety of a historian would be

considerably reduced, but reports and translations which fulfil these requirements are still a desideratum.¹

The two great epics and the puranas are the works which mainly represent the historical branch of Indian literature. But woe betide him who would look up to them as authentic and trustworthy sources. However important and interesting in many other respects, historical accuracy is not a quality they aim at; for they are rather a depository of legendary myths, which are enlarged by an imagination morbidly fond of wonders. Nevertheless they must not be quite thrown away as useless, for they may contain here and there some grains of historical truth, as a rock may containsome dispersed grains of gold, though they can with difficulty only be separated from their less precious surroundings. Besides the epics and puranas, the law books make sometimes occasional remarks which throw light on historical subjects; they together with the works on polity allow us merely an insight into the manners and customs of the old Hindus; and in this respect they are of the highest importance. Iu the following pages we shall discuss the customs of the ancient Indians so far as they bear on the nature of their arms. Two ancient Sanskrit works, the Nitiprakāsikā of Vaisampāyana and the Sukranīti of Usanas or Sukrācārya, are in my possession which contain important, and up to the present generally unknown information on this subject, which I hope will be of interest to the reader.

Yet in this time of literary upholstery people desirous of gaining literary success often overlook these facts so evident to all outsiders. A sad example of labor thus thrown away and of much patient research so fruitlessly spent, is the voluminous history of the Mongols, in the preface of the first volume of which the author, Mr. Henry H. Howorth, says that he approaches 'the problem as an ethnologist and historian and not as a linguist,' and that he had 'no access to the authorities in their original language, and only to translations and commentaries.' This confession, however honest, need not have been made, as the work itself throughout suggests by its defects the want of linguistic attainments which for a writer on oriental history is a conflict size year now.

The Nītiprakāśikā is an extract from a larger work devoted to the Nītisāstra,² which is ascribed to Vaisampāyana, the same to whom the Yajurveda is assigned, and who recited the contents of the Mahābhārata to Janamejaya, the greatgrandson of Arjuna, the son of Pāṇḍu. Vaisampāyana is introduced in the Nītiprakāśikā as communicating at Takṣaśilā in the Panjab to the same king Janamejaya the nature of the Dhanurveda, the peculiarity of the weapons and of all the matter connected with war and the administration of the kingdom. The Nītiprakāśikā is divided into eight books, the first five speak about the Dhanurveda and weapons in general, the sixth and seventh contain remarks on the divisions and constitution of an army, and the eighth on different subjects connected with the royal prerogative and the duties of subjects.

Horace Hayman Wilson, the eminent Sanskrit scholar, has devoted a special article to "the art of war as known to the Hindus;" but this excellent essay was written many years ago and does not enter deeply into the question of gunpowder and firearms, which is particularly commented upon in the following lines.

The smallest unit of the Indian army, a patti, is described to consist of 1 chariot, 1 elephant, 3 horses, and 5 men. The Senāmukha, Gulma, Gaṇa, Vāhinī, Prtanā, Camā, and Anīkinī are respectively three times as big as the corps preceding them, and the 9th formation, which was called Akṣauhinī and was considered to represent a complete army, was ten times as numerous as the preceding Anīkinī. The Nītiprakāsikā, after describing the original patti, goes on to say that a chariot has a retinue of 10 elephants, 100 horses, and 1,000 men;

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³ Amarakośa, II. viii, 48 and 49; Nitiprakasika, vii, 5. "Eko ratho gajaścaiko narah pañca hayah trayah."

² I hope soon to obtain a copy of this work, as it is in the library of one of my native friends. It is perhaps the work alluded to in the following words contained in the Asvalayana Grhya: "Sumantu-Jaimini-Vaisampayana-Paila-sotrabhashya-bharata-mahabharata-dharmacaryab."

an elephant one of 100 horses and 1,000 men; a horse one of 1,000 soldiers, and that a foot soldier had ten followers.

According to the first mentioned scale the different corps would have the following strength:—

Army Corps.				Chariot.	Elephant,	Horse.	Foot.
Senamukha Gulma Gana Vahini Prtana Camu		::		1 3 9 27 81 243 729 2,187 21,870	1 3 9 27 81 243 729 2,187 21,870	3 9 27 81 243 729 2,187 6,561 65,610	5 15 45 135 405 1,215 3,645 10,935 109,350

According to the second estimate one chariot alone demands an extraordinary number of supporters. And indeed the Nitiprakāsikā lays down that the various army corps should have the following constitution⁵:—

Army Corps.			Chariot.	Elephant.	Horse.	Foot.
Patti Senamukha Gulma Gana Vahini Prtana Camu Antkini Akşauhini	::		1 3 9 27 81 243 729 2,187 21,870	10 30 90 270 810 2,430 7,290 21,870 218,700	1,000 8,000 9,000 27,000 81,000 243,000 729,000 2,187,000	100,000 300,000 900,000 2,700,000 8,100,000 24,300,000 72,900,000 218,700,000 2,187,000,000

4 Nitiprakasika vii, 6-8.

- Naga data rathasyasya tatam atvassahanugah sahasram tu narah proktah parivara nrpajilaya.
- Ekanyaikanya naganya satam asvah prayayinah padatayah sahasram tu pratyangosvanuyayinah.
- Ekasyaikasya caévasya sahasram tu padatayah dasa caitan pattin yunktwa kartsuena ganana tviyam.

Nitiprakasika, vii, 9-11, 27-30.

 Eko ratho dasa gajah sahasram catra vajinah laksasankhya narah pattavevam agre'pi yojana. The Hindu delights in large numbers, and to this propensity must be ascribed this exorbitant calculation. The population of the whole earth is generally assumed to amount to 1,075,000,000 souls, and in the Nītiprakāšikā we are told that a complete army requires a number of men, which surpasses by more than a half the number of all the inhabitants of this globe.

The Sukranīti gives a much more sensible distribution. According to that work the aggregate of the military unit would be 5 chariots, 10 elephants, 40 camels, 64 bulls, 320 horses, and 1,280 men.⁶

The formation of an army into different columns is a subject to which great attention was paid. Four different kinds of such columns or vyūhas are enumerated—the Danda, Bhoga, Asamhata, and Mandala; the first had 17 varieties, the second 5, the third 6, and the fourth 2. Besides these, five most important columns were not enrolled in any of these four sets; they were called Varāha, Makara, Garuda, Krauūca, and Padma.

Pratyangnistrigunaih sarvaih kramat akhya yathottaram antkintm dasagunam ahuraksauhintm budhah.

^{11.} Senamukho tu gunitah trayascaiva ratha gajah

trimaat trilaksapadatah trisahasram hi vajinah; &c., &c. 27. Aksauhinyam tvekavimatsahasrani janadhana

tatha castasatam caiva suptatim rathagam viduh. 28. Astadasasahasrani dve lakse ca narotvara.

tathā saptašatam caiva gajānam gaņana tviyam. 29. Dve koṭi caiva lakṣāṇām aṣṭādaša mahīpate tathā saptatisahasrā gandharvāššīghrayayinab.

Dve carbude ca koţiścapyaşţādaśasamiritaţı lakṣāŋām saptatiścaiva padatinam itiyati.

⁶ See Sukraniti, Chapter V, Slokas 20, 21.

⁷ See Nitiprakāšikā, vi, 3-9.

Dando bhogo'samhataśca mandalavyūha eva ca vyūhāścatvāra ovaite teşu bhelān bravimyahum.

Pradaro drdhakassatyaścapabhosvaksirova ca supratistho pratisthuśca śysno vijayasunjayau,

All these troops were commanded by generals, whose rank depended upon the number of troops under their orders. The ministers of the king held mostly also the office of generals.

All the soldiers, from the private to the commander-inchief, received their pay regularly every month. The crown-prince, who was generally the next in command to the king, received every month 5,000 varvas, or gold coins; the commander-in-chief drew 4,000 varvas; the atiratha, the first charioteer, who was usually a royal prince, received 3,000 varvas; the mahāratha 2,000 varvas; the rathika and the gajayodhi, 1,000 varvas each; the ardharatha 500 varvas; the ekaratha (commander of a chariot), and the leader of an elephant got each 300 niṣkas. The general commanding all the cavalry obtained 3,000 niṣkas; the general in command of the whole infantry received 2,000 niṣkas. An officer commanding 1,000 men of infantry got 500 niṣkas; an officer who led the same number of troopers received 1,000 niṣkas;

Viéálovijayah súci sthúno karnaścamúmukhah mukhásvovijavaśceti dandasantadaśátmakah.

Gomutrika hamsika ca sañcari saknţastatha evam karapatantiti bhogabhedastu pañca vai.

Ardhacandrakataddharo vajrassakatakastatha śrńgi ca kakapadica godhiketyaparasmrtah.

Asamhatah sadvidhassyat ityahurvyuhakovidah sarvabhadro durjayasca mandalopi dvidha iti.

Varshi makaravyuho garudah krauñca eva ca podmadyaścańgavaikalyat etebhyaste prthak smrtah.

^{*} The value of the varva, which is an ancient coin, is difficult to determine. In the Nitiprakašika, VI, 89-101, the rewards which are to be given to soldiers who kill a king, a crown-prince, a commander-in-chief, a leader of an Akşauhini, a councillor, and a minister, &c., &c., are also fixed in varvas.

Dadyat prahrsto niyutam varvanam rajoghatine tadardhantatsutavadhe senapativadhe tatha.

^{90.} AkşauhinIpativadhe tadardham paricakşate

mantryamatyavadhe caiva tadardham tu pradapayet, &c., &c. Śloka 89 is also found in the Kamandakiya, XIX, 18, having been most probably taken from this work of Vaisampayana.

an officer who had 100 small pattis under his command and who must ride on a horse drew only 7 varvas, while a private got 5 suvarnas.

The following fourteen persons got only each 15 varvas a month:—1, an elephant driver; 2, a charioteer; 3, an ensign-bearer; 4, a superintendent of wheels; 5, an officer in command of 300 men of infantry; 6, a camel-express; 7, a messenger; 8, the head gate-keeper; 9, the chief-bard; 10, the chief-singer; 11, the chief panegyrist; 12, the head store-keeper; 13, the army paymaster, and 14, the muster master. The Sukranīti contains another scale of salaries.

If this scale of salaries is correct and if the salaries were really paid, one would feel inclined to think, that an extensive gold currency existed in ancient India.

Armour was worn by the warriors, and even elephants and horses were similarly protected.

The description of the weapons which follows in this chapter is mainly taken from the Nītiprakāšikā.

^{*} See Nitiprakatika, VII, 33-42.

Yuvarājāya varvāņām pañcasāhasraki bhrtiḥ sarvasenāpraņetre ca catussāhasraki ca sā.

Bhrtiscatirathe deya varvanam trisahasrakam maharathaya sahasradvayam rajñadhimasakam.

Vetanam rathikāyātha sāhasram gajayodhine dadyāt ardharathāyātha vetanam satapañcakam.

Eksamai rathikāyātha tādrēc gajasādine niekāņām trisatam dadyāt yatastau tatkutumbinau.

Sarvasvadhipati rajiiastrisahasram sa carhati padatadhipatiscapi dvisahasrasya bhajanam.

Padatanam sahasrasya netre pañcasatam smrtam tatha casvasahasrese sahasram vetanam bhavet.

Satapattyadhipe sapta varvānām hayayāyine padātaye suvarnānām pañcakam vetanam bhavet.

Gajayantussarathesca dhvajine cakrapaya ca padatitrisatesaya pathikostracaraya ca.

Varttikadhipatescapi vetrinam pataye tatha sutamagadhavandinam pataye vivadhadhipe.

Senaya bhrtidhatre ca bhatanam gananapare masi masi tu varvanam dasapanca ca vetanam.
 See Sukrantti, Chapter V, 4l. 23–28.

The Hindu is fond of connecting everything, even the most material substance, with some metaphysical cause. We must not be surprised, therefore, if weapons and arms do not make an exception to this rule.

A supernatural origin is ascribed to all armour. The primeval Dakṣa had two daughters—Jayā and Suprabhā—who were given in marriage to Kṛśāśva, the mind-begotten son of Brahma. Jayā became, according to a promise of Brahma, the mother of all weapons and missiles, while her sister Suprabhā brought forth at first ten sons who were called Samhāras restraining spells; and afterwards through the special favor of Brahma an eleventh son, Sarvamocana (releaser of all), was born. 11

The knowledge of everything connected with weapons and arms is confined to the Dhanurveda, i.e., the knowledge of the bow, and he only, who is well acquainted with this Veda, can hope to conquer his foes. The Dhanurveda is one of the four Upavedas. Even the gods had originally no intimate acquaintance with the precepts of the Dhanurveda, and this deficiency was one of the causes why they were at one time totally defeated by the demons or asuras. Eventually the gods were instructed in the mysteries of the Dhanurveda; and this Veda was communicated to Prthu by Brahma himself.

The Dhanurveda when personified is credited with possessing four feet, eight arms, and three eyes, and Sānkhyāyana is mentioned as the head of his Gotra or race. In his four arms on the right he holds a thunderbolt (vajra),

¹¹ See Nitipraktsikt, 1, 45-47; II, 38.

Kṛśāivo mānasah putro dve jāye tasya sammate jayā ca suprabhā caiva dakṣakanye mahāmati.

Jaya labdhavara matto (a) sastranyastranyasuta vai pascat dasa para capi tavat putran ajijanat.

Samhärän nämadurdharsän duräkrämän baltyasah mantradaivatasamyogät sästränyastratvam äpnuvan.

Sarvamocananama tu suprabhatanayo mahan muktamuktakhilasamo madvarat (a) prathitah parah.
 (a) Brahna speaks here himself.

a sword (khadga), a bow (dhanu), and a discus (cakra); in his four arms on the left are a hundred-killer (sataghnī), a club (gadā), a spear (sūla), and a battle axe (paṭṭiśa). His crest is provided with charms; his body is polity; his armour is a spell; hisheart represents withdrawing spells; his two earrings are the weapons and missiles; his ornaments are the various war movements; his eyes are yellow; he is girt with the garland of victory, and he rides on a bull.¹²

The spell which effects the destruction of one's enemies and which grants victory is as follows: Om namo bhagavate dham dhanurvedāya mām rakṣa rakṣa mama śatrūn bhakṣaya bhakṣaya hum paṭ svā hā; i.e., "Om salutation to the dham dhanurveda, protect, protect me, devour, devour my enemies hum paṭ svā hā." If these 32 syllables are 32,000 times repeated the supplication will be successful.¹³

The arms are divided, according to their nature, into mukta or those which are thrown, amukta or those which are not thrown, muktāmukta or those which are either thrown or not thrown, and into mantramukta or those which are thrown by

¹² See Nitiprakāšikā, II, 1-4.

Catuşpācca dhanurvedo raktavarņašcaturmukhaḥ astabāhustrinetrašca sāňkhyāyanasagotravān.

Vajram khadgo dhanuscakram dakşabāhucatuştaye

śataghnica gadāśūlapaţţiśa vāmabāhuşu.

Prayogakoţirayuto nityango mantrakancukan upasamhārahrdayassastrastrobhayakundalan.

Anekavalgitākārabhūsaņah pingaleksaņah jayamālāparivīto vīsārūdassa ucyate.

¹³ See Ibidem, II, 5-9.

Etammantram pravakşyāmi vairijālanikṛntanam ātmasainyasvapakṣāņām ātmanaśoābhirakṣakam.

Adau pranavam uccarya na ma ityaksare tatah vateti bhagapurvam dham dhanurvedaya coccaret.

Mām rakṣa rakṣetyuocārya mama šatrūn atho vadet bhakṣayeti dvirucoārya hum paṭ svā hetyathocoaret.

Aham evam rsiścianya gayatri chanda ucyate mahesvaro devatasya viniyogo'rinigrahe.

Dvätrimšadvarpakamanum varpasaňkhyāsahasrakaih japitvä siddhim apnoti ripaňšcapyadhitisthati.

The expression dhem dhanuveds is formed in the same way as Rem Rdma, Vim Vijhefrara, &c.

spells. ¹⁴ This classification is more theoretical than practical, as it is not strictly followed. The gods can, moreover through the application of spells, turn all weapons into projectiles. ¹⁵

The Agnipurana arranges the weapons in five classes, into 1, those thrown by machines, yantramukta; 2, those thrown by the hand, pāmmukta; 3, those thrown and drawn back, muktasandhārita; 4, those which are not thrown, amukta; and, 5, the weapons which the body provides for the personal struggle, the bāhuyuddha. Other classifications besides these exist, but the difference between them is not essential.

Twelve projectiles and projectile weapons constitute the division of the mukta or thrown weapons.

1. The dhanu (bow) is personified as a being which has a broad neck, a small face, a slender waist, and a strong back. He is four cubits in height, and bent in three places. He has a long tongue, and his mouth has terrible tusks; his color is that of blood, and he makes always a gurgling noise. He is covered with garlands of entrails, and licks continually with his tongue the two corners of his mouth.¹⁷

According to the rules laid down in the Dhanurveda the bow should be bent by the left hand, the bowstring should be taken by the right hand, and the arrow be placed on the

¹⁴ See Ibidem, II, 11-13.

Muktam caiva hyamuktam ca muktamuktam atah param mantramuktam ca catvari dhanurvedapadani vai.

Muktam bausdi vijñeyam khadgadikam amuktakam sopasamhamm astram tu muktamuktam udaharet.

Upasamhararahitam mantram uktam ihocyate caturbhirebhih padaistu dhanurvedah prakasate.

¹⁵ See Ibidem I. 47 b, note 11.

Nee Agnipurana (Dhanurveda) 148, 2.
Yantramuktam panjimuktam muktasandharitam tatha amuktam bahuyuddham ca pancadha tat prakirttitam.

¹⁷ See Nitiprakasika, II, 17; and IV. 8, 9.

Prthugrivam sükşinaşirah tanumadhyam suprethavat catuşkişkupramsudeham trinatam dirghajihvakam.

Damştrakaralavadanam raktābham ghargharasvanam antramālāpariksiptam lelihānam ca arkvaut.

thumb and between the fingers of the bowhand on the back of the bow. 18

The length of the bow, and consequently also of the arrow, varies. Two strings are generally fixed to a bow, and the archer wears on his left arm a leather protection against the bowstring, and a quiver on his back. Those well skilled in archery distinguish fourteen different movements which can be made when using the bow. In the Agnipurana the bow is declared to be the best weapon.

In the law book of Manu we read, that one bowman placed on a wall can fight a hundred men, and that a hundred archers can fight ten thousand; therefore a fort is recommended. In the Sukranīti occurs the same verse but instead of the word for bow dhans that for a missile astra is given, which imparts a wider meaning to the sentence, especially if it is taken to allude to firearms, unless dhans itself stands for missile in general.¹⁹

¹⁸ Ibidem, II, 17; and IV, 11-14.

Dhanurvedavidhānena nāmya vāmakarena tat dakṣinena jyayā yojya pṛṣṭhe madhye pṛagṛhya tat.

Vámáňgustham tadudare prethe tu caturaňgulith puňkhamadhyo jyayá vojya sváňgulitvivarena tu.

Akarnam tu samākṛṣya dṛṣṭim lakṣyo viveṣya ca lakṣyat anyad apaṣyanstu kṛṭapuākhaḥ prayogavit.

Yada muñeet samm vidhye kṛtahastastadocyate evam banah prayoktavyah hyatmanaksyah prayatnatab.

¹⁹ See Nitiprakāšikā, II, 17, and IV, 18-20.

¹⁸ Laksyasya pratisandhanam akarsanavikarsane

¹⁸ Lakşyasya pratesandhanam akarşanavikarşane paryakarşanukarşanca mandalikaranam tathā.

¹⁹ Püranam sthärsnam caiva dhünanam bhramanam tatha asannadürapātauca prothumadbyamapātane.

²⁰ Etani valgitanyahuscaturdasadhanurvidah.

Computer Sukraniti, Chapter V, al. 152; Agnipurana, 148, 6-37; 149, 1-19.

See Manu, VII, 74, (Hitopadeśa, III, 50 Pañcatantra, I, 252).

Ekuh satam yodhayati prakarastho dhanurdharah.
 satam dasa sahasrani tusmat durgam visisyate.

and compare these verses with Sukraniti, IV, VI, 10.

Eknh satam yodhayati durgaatho'stradharo yadi satam dasasahasraqi tasmat durgam samasrayet.

- The isu (arrow) has a dark large body; is three cubits long, an añjali (i.e., the hollow of the two hands) in circumference and goes very far; two movements are ascribed to the arrow.²⁰
- 3. The bhindicala or bhindipala (crooked club) has a crooked body; its head, which is bent and broad, is a cubit long, and it is a hand in circumference. It is first whirled thrice and then thrown against the foot of the enemy. When throwing the bhindivala, the left foot should be placed in front.²¹
- 4. The sakti (spear) is represented as being two cubits long, with a steady sideway movement. It has a sharp tongue, a horrible claw, and makes a sound like a bell. It has an open mouth, is very dark, and is colored with the blood of the enemy. It is covered with garlands of entrails; has the mouth of a lion, and is fearful to look at. It is as broad as a fist and goes very far. It must be taken up and thrown with two hands. Its movements are of six kinds.²²

²⁰ See Ibidem, I, 17; and IV, 28, 29.

Işurntlabrhaldeho dvihastotsodhasamyutah paridhya cañjalimito'nalpamatragatistu sah.

Bhramanam keepanam ceti dve gati sthulassamate. Compare Sukraniti, Chapter V, 4l. 152.

²¹ See Ibidem, I, 17, and IV, 30, 31.

Bhindivalastu vakrango namrasinso brhacchirah hastamatrotsedhayuktah karasammitamandalah

Tribhramanam visargaśca vämapādapurassaran padaghātāt ripuhano dhāryah pādatamandalaih. Compare Agnipurana, 151, 15-

²² See Ibidem, I, 17, and IV, 32-35.

Šaktirhastadvayotsedhā tiryaggatiranākulā tiksņajihvogranakharā ghanļanādabhayankart.

Vyaditasyatintlaca satrusonitarañjita antramalapariksipta simhāsya ghoradarsana.

Brhatsarurdüragamā parvatendravidāriņī bhujadvayaprerantyā yuddhe jayavidhāyinī.

Tolanam bhramanam caiva valganam namanam tatha mocanam bhodanam eoti sanmargasiaktisamaritah.

- 5. The drughana (hatchet) has an iron body, a crooked neck, and a browl head. It is 50 angulas long and a fist in circumference. Four movements are peculiar to it.²³
- 6. The tomara (tomahawk) has a wooden body and a metal head formed like a bunch of flowers. It is three cubits long, has a red color, and is not crooked. It is moved in three ways.²⁴
- 7. The nalikā (musket) has a straight body, is thin-limbed, and hollow in the middle. It pierces the vital parts, is dark, and discharges the missiles of the Dronicapa. When it is to be used, it is taken up, ignited, and pierces the mark. These are the three actions connected with the nalikā.

It seems to have been a small-sized gun, a sort of carbine, as it is only described as effective against enemies standing near.²⁵

8. The laguda (club) is described as having a small foot, a broad shoulder, and a broad head. The foot part is surrounded with metal. It is small and very broad. It has the

²³ Thidem, II. 17; IV, 36, 37.

Drughapastváyassángassyát vakragrívo brhacchiráh paűcásat angulyutsedho mustisammitamandalah.

Unnamanam prapatam ca sphotanam daranam tatha catvaryetani drughane valgitani aritani vai.

³⁴ Ibidem, II. 17; 1V. 38, 39.

Tomarah kāṣṭhakāyassyāt loha@rṣah suguechavān hastatrayonnatāngašca raktavarnastvavakraonh.

Uddhānam vinivṛtišca vedhanam ceti tattrikam valgitam šastratattvajūsh kathayanti naradhipah. Compare Agnipurāna, 151, 10.

²⁵ Ibidem, II. 17; IV. 40, 41.

Nalika rjudeha syat tanvangi madhyarandhrika marmacchedakari nila dronicapasarerini.

Grahanam dhmāpanam caiva syntam ceti gatitrayam tām āśritam vidītvā tu jetāsannan ripūn yudhi.

Mallinatha uses the expression stronicsps in his commentary to Naisadha, 1f, 28. Compare p. 68.

shape of a tooth. It has a hard body and is two cubits high. Its movements are of four kinds.²⁶

- 9. The pāśa (lasso) is composed of very small scales, made of metal. It has a triangular form, is one span in circumference, and is ornamented with leaden balls. It has three peculiar movements of its own. According to the Agnipurana it is 10 cubits long, round, and the noose is a hand in circumference. It is not regarded as a noble weapon.²⁷
- 10. The cakes (discus) has the form of a circular disk with a quadrangular hole in its midst. Its color is like that of indigo water and its circumference amounts to two spans or 10 cubits according to the Sukranīti. Five or seven motions are connected with the discus practice. It is most probably identical with the quoit still in use in some Sikh regiments and also among the troops of Native Indian princes.²⁸
- 11. The dantakantaka (tooth-thorn) is a thorn made of metal, is broad at the front, has a thin tail, and its color resembles charcoal. It is an arm high, has a good handle, is straight in

See Ibidem, II. 17; IV. 42, 43.

Lagudassüksmapādassyāt prihvamāah sthūlaāirsakah. lohabaddhāgrabhāgaāca hrasvadehassupīvarah.

Dantakayo dṛḍhangaśca tatha hastadvayonnataḥ utthānam patanam caiva peşanam pothanam tathā. Compare Agnipurana, 151, 15.

²⁷ See Ibidem, II. 17; IV. 45, 46.

Pääassusüksmävayavo lohadhätustrikonavan prädejaparidhissisagulikäbharanäücitah.

Prasaranam vestanam ca kartanam ceti te trayah yogah pasasrita loke pasah keudrasamasritah.
 Compare Agnipurana, 150, 2-6; 151, 6, 7.

²⁸ See Ibidem II. 17 ; IV. 47, 48.

Cakram tu kupdalākāram ante svašrasamanvitam ntlisalilavarpam tat prādešadvayamapdalam,

Granthanam bhramanam caiva asopanam parikartanam dalanam ceti pañcaiva gatayascakrasamáritab.
 Compary Sukruntti, Chapter V. 6l. 156; Agnipurana, 151, 8.

its body, and looks frightful. Two movements are required for using it.20

12. The musundi (octagonheaded club) has broad knots, a broad body, and a good handle for the fist. It is three arms long, and has the fearful color of a cobra. Its two principal movements are the jerking and the whirling.³⁰

B. The class of the amukta weapons includes twenty different species.

1. The cajra (thunderbolt) was, according to tradition, made out of the backbone of the sage Dadhīci. It keeps its mythical character throughout. Nothing can withstand its splendour, and it was originally made for the destruction of the demon Vrtra. It shines brightly with the light of a krore of suns, and it resembles the fire which shone at the dissolution of the world. Its fangs extend to a yojana (10 miles) in length, and its tongue too is most horrible. It resembles the night of destruction at the end of the world, and is covered with 100 knots. Its breadth amounts to five yojanas and its length to 10 yojanas. Its periphery is covered with sharp points; in color it resembles lightning; a broad strong handle is fixed to it. Its movements are four in number. 31

²⁹ See Ibidem, II. 17; IV. 49, 50.

Dantakanţakanāmā tu lohakanţakadehavān agre prihussūksmapacehatcāngarasanibhākṛtiḥ.

Bahunnatassutsarusca dandakāyo'gralocanaḥ pātanam granthanam ecti dve gatī dantakanṭake.

See Ibidem II. 18; IV. 51, 52.

Musundi tu brhadgranthirbphaddehassusatsaruh bahutrayasamutsodhah kranasarpogravarnavan.

Yapanam gharpanam ceti dve gati tat sama@rite.
 Another form of the word is braupdi.

³¹ See Ibidem, II. 19; V. 1-6.

Amuktaprathamam vajram vakşyami tava tacchrpu aprameyabalam vajram kamarapadharam ca tat.

Dadhiciprethashijanyam sarvatojah prasamakara vitrasaranipatartham daivatojopavirahitam.

- 2. The \$\textit{ii}\$ (hand-sword) is two cubits long, has no hilt for the protection of the hand, and is black colored. The front part of the blade is curved, and it is five fingers broad. Four movements are peculiar to it. 32
- 3. The parasis (axe) is a thin stick with a broad mouth. Its face is in front, curved like a half moon, the body is dirty colored, but the face is shining. At the fact end is the handle, and it has a head. Its height is the length of an arm. Its qualities are felling and splitting.³³
- 4. The goširsa (cow-horn spear) is two feet long; it is wooden in the lower parts and iron on the upper part. It has a blade, is of dark metal color, is three-cornered and has a good handle. Its height amounts to 16 thumbs; it is sharp in front and broad in the middle. Indra presented the gośirsa together with a seal to Manu, and the cow-horn spear and the signet-ring became henceforth the emblems of royalty. The gośirsa is handled with four movements.³⁴
- The asidhenu (stiletto) is one cubit long, has no handguard at the handle, is dark colored, has three edges, is two
 - Koţistryapratikasam pralayanalasannibham yoţanotsedhudarhstrābhirjihvayā catighorayā.
 - Kalaratrinikāšam tat šatsparvasamāvṛtam pañoayojanavistāram unnatam dašayojanam.
 - Apimapdalasanvitam paritah tiksuakotimat tatidgauram ca pethuna tsaruna ca virajitum.
 - Calanam dhunanam caiva chedanam bhedanam tathā valgitāni ca catvāri sadā vajram šritāni vai.
 Compare Agnipurāņa, 151, 16.
 - 32 Ibidem, II. 19; V. 7, 8.
 - Ili hastadvayotsedha karatrarahitatsaruh syama bhugnagraphalaka pañcangulisuvistrta.
 - Sampatam samudirnam ca nigrahapragrahau tatha tlim etani catvari valgitani sritani vai.
 - 23 Ibidem, II. 19; V. 9, 10.
 - Parušussūksmayastissyat višalāsyah puromukhah ardhacandrāgre kotistu malināngassphuranmukhah.
 - Tsarupādassašikharo bāhumātronnatākṛtiḥ pātanam chodanam ceti guņau parašum āšritau.

Compare Agnipurana, 151, 13.

History II. 19; V. 11-14.

 Gošīrsam goširah prakhyam prasāritapadadvayam adhastat dāruyantrādyam ūrdhvāyaḥphalakāficitam. thumbs broad, and is applicable for fighting at near quarters. It is fastened with a waistbelt and is called the sister of the sword. It requires three movements. It is worn by kings. 35

6. The laxitra (soythe) has a crooked shape, is broad at the back and sharp in front. It is black colored, five thumbs broad and one cubit and a half high. It is provided with a broad handle and is able to cut buffaloes into pieces. It is lifted with both arms and thrown.³⁶

7. The distant (scatterer, bumarang) has a knot at the foot, a long head and is a hand broad. Its middle part is bent to the extent of a cubit, it is sharp, black colored and two cubits long. Whirling, pulling, and breaking are its three actions, and it is a good weapon for charioteers and foot soldiers.³⁷

The general belief is that the bumarang is a weapon peculiar to the Australians; but this is by no means the case. It is well known in many parts of India, especially in its Southern Peninsula. The Tamulian Maravar and Kallar employ it when hunting and throw it after deer. In the

 Nilalohitavarnam tat triraśrica susatsaru sodasańgulyunnatam ca tiksnagram prthumadhyakam.

 Satkṛtya manave dattam mahendrena samudrikam prabhutvasūcake loke rājūsm gostrsamudrike.

 Muştigrahah parikşepah paridhih parikuntanam catvaryetani gosirşe valgitani pracakşate.

35 See Ibidem, II. 19; V. 15-17.

 Asidhenusamākhyāta hastaunnatyapramāņataḥ atalatratsaruyutā syāmā koţitrayāśritā.

 Ańgulidvayavistroż hyżsannaripughatini mekhalägranthini sa tu projyate khadgaputrika.

 Muşiyagragrahanam caiva patanam kuntanam tathā valgitatrayavatyeşā sadā dhāryā nrpottamaiḥ.

36 See Ibidem, II. 19; V. 18, 19.

 Lavitram bhugnakayam syat prathe guru purassitam syamam pancangulivyamam sardhahastasamunnatam.

 Tearuņā guruņā naddham mahisādinikartanam hāhudvayodyamaksepau lavitre valgite mate.

22 See Ibidem, II. 19; V. 20, 21.

 Astaro granthipadassyat dirghamaulirbrhatkarah bhugnahastodarassitah syamavarpo dvihastakah.

 Bhramanam karşanam csiva troţanam tat trivalgitam jāātvā šatrūn rane hanyāt dhāryassādipadātiksih. Madras Government Museum are shown three bumarangs, two ivory ones, which came from the armoury of the late Raja of Tanjore, and a common wooden one, which hails from Pudukota. The wood of which the bumarang is made is very dark. I possess four black wooden and one iron bumarang, which I have received from Pudukota. In the arsenal of the Pudukota Raja is always kept a stock of these sticks. Their name in Tamil is valai taqi (200 \$\simeq \psi \psi\$) bent stick, as the stick is bent and flat. When thrown a whirling motion is imparted to the weapon which causes it to return to the place from which it was thrown. The natives are well acquainted with this peculiar fact. The length of the dstara or bumarang is not always exactly the same, the difference amounts often to more than one cubit.

8. The kunta (lance) has an iron body, a sharp top, and six edges. It is six or ten cubits high, and is round at the foot end. It is handled in six ways.³³

9. The sthusu (anvil) has a red body and many knots standing near to each other; it is as high as a man, and straight. It is whirled and fells the enemy to the ground.

10. The prāsa (spear) is seven cubits long and made of bamboo, which is colored red. It has a head made of metal, and is sharp at the foot end; it is adorned with silken tufts. Four movements are prescribed for it. In the Sukraniti it resembles a broad sword.⁶⁰

³⁰ See Ibidem, II. 19; V. 22, 23.

Kuntastvayomayangamyat tikapaarngah sadaarman pancahastasamutsodho vrttapado bhayankarah.

Uddinam avadinam ca nidinam bhūmilinakam tiryaglinam nikhātam ca sadmargah kuntam asritah Compare Sukraniti, Chapter V, 6l. 165.

³⁰ Sae Thidem, II. 20; V. 24.

Sthunastu raktadehassyat samipadrdhaparvakah pempramana rjustasmin bhramanam patanam dwayam.
 See Ibidem, II. 20; V. 25, 26.

^{25.} Presesta saptahastassyst aumnatyona tu vainavah

Prasasta saptahastasayat aumatyona tu vanavan lohastraastikanapadah kauseyustabakancitah.

- 11. The pināka or trišūla (trident) has three heads, is sharp in front, made of brass, has an iron head, and measures four cubits. It has a tuft made of the hair of a bear, and its neck is ornamented with brass armlets. It is shaken and impales the enemy.⁴¹
- 12. The gadā (club) is made of sharp iron, has 100 spikes at its broad head, and is covered on the sides with spikes. It is a formidable weapon, four cubits long, and its body equals a carriage axle in measure. The head is adorned with a crest; it is covered with a golden belt, and is able to crush elephants and meuntains. Twenty different motions are ascribed to the gadā. By means of gunpowder it is thrown out of projectile weapons of various forms.
- 13. The mudgara (hammer) is small at the foot end, has no face, and is three cubits long. Its color resembles
 - Akarşaśca vikarşaśca dhūnanam vedhanem tatha catasra ets gatayo raktaprasam samaśritah,
 Compare Sukraniti, Chapter V. 41, 155.

41 See Ibidem, II. 20; V. 27, 28.

- Pinakastu tristrsassyst sitagrah kruralocanah kansyakayo lohastrsascaturhastapramanavan.
- Raparomastabakuko jhallivalayagrivavan dhumanam mrotanam ceti trisulam dve śrite gati.
 Compare Šukraniti, Chapter V, al. 156, and Agnipurana, 151, 9.
- 42 See Ibidem, II. 20; V. 29-34.
 - Gada šaikyāyasamayi šatārapṛthušīrsaka šankuprāvarapā ghorā caturhastasamunnata,
 - Rathakşamatrakaya ca kiritancitamastaka suvarnamekhala gupta gajaparvatabhedint.
 - Mandalani vicitrani gatapratyagatani ca astrayantrani citrani sthanani vividhani ca.
 - Parimoksam praharanam varjanam paridhavanam abhidravanam aksepam avasthanam savigraham.
 - Paravṛttam sannivṛttam avaplutam upaplutam dakṣiṇam maṇḍalam caiva savyam maṇḍalam eva ca.
 - Aviddham ca praviddham ca sphojanam jvalanam tatha upanyastam apanyastam gada margasca vimsatih.
 Compere Agnipuraoa, 151, 12.

⁴³ The word Astrayantrani (see v, 31-b) is explained in the old commentary accompanying the Nitiprakasika as "astravatagnyadinirmanaprayuktapreranani."

honey, its shoulder is broad, and it weighs eight loads.⁴⁴ It has a good handle, is round, black colored, and is a hand in circumference. It is whirled around and fells things to the ground.⁴⁵

- 14. The sīra (ploughshare) is doubly curved, has no head, but an iron-plated front, and crushes the objects with which it comes into contact. It equals a man in height, is of agreeable color, and by means of much dragging it causes persons and things to fall to the ground.⁴⁶
- 15. The musala (pestle) has neither eyes nor head, neither hands nor feet. It is well joined together at both ends and fells and crushes enemies.⁴⁷
- 16. The pattisa (battle axe) is of a man's height, has two sharp blades and a sharp top. Its handle has a protection for the hand. The pattisa is generally called the uterine brother of the sword.⁴⁹
- 17. The maustika (fist-sword, dagger) has a good hilt, is a span long and ornamented. Its end is sharp, it has a high neck, is broad in the midst and dark colored. It can make

A load or bhire is generally estimated to be equal to 20 tules = 2,000 pales of gold, or between 140—150 pounds.

⁴⁶ See Phidem, II. 20 : V. 35, 36.

Mudgarassukşmapādassyāt hinaširşastrihastavān madhuvarnah pṛthuskandhascastabhāragurusca sah.

Satsarurvartulo nilo paridhya karasammitah bhramanam patanam ceti dvinidham mudgarearitam. Compare Agnipurana, 151, 14.

⁴⁶ See Ibidem, II. 20 ; V. 37.

Stro dvivakro višikho lohapatjamukhah krsan pumpramanah snigdhavarhah svakursavinipatavan.

⁴ See Ibidem, II. 20 ; V. 38.

Musalastvakşistrşābhyām karaih pādairvivarjitah mule cantetisambandhah patanam prothanam dvayam,

 [★] See Ibidem, II. 20; V. 39.

Pattifah pumpramanassyat dvidharastiksnasringakah hastatranasamayuktamustih khadgasahodarah.

Compare Sukraniti, Chapter V, 6l. 153, and Agnipurana, 151, 16.

all sorts of movements, as it is a small and very handy weapon. Its qualities are enlarged upon by Vaisampāyana.49

- 18. The parigha (battering ram) is of a round shape, as big as a palmyra-tree, and of good wood. Experts know, that a whole troop is required to make it move and strike.⁵⁰
- 19. The mayūkhī (pole) is a staff, has a hilt, and is of the height of a man. It is covered with bells, exhibits various colors, and is provided with a shield as a friend. It is used for striking, for warding off a blow, for killing, for discharging and for attacking.⁵¹
- 20. The śataghnī (hundred-killer) is provided with thorns, is of black iron, and hard. It looks like a mudgara, is four cubits long, round and provided with a handle. According to Vaisampāyana it resembles in all its movements the gada, it was therefore like the gadā shot out of other projectile weapons. According to others it is itself a projectile weapon, a great cannon. The name states only its destructiveness, and leaves its nature doubtful; but if it was hurled out of

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⁴⁹ See Ibidem, II. 20 ; V. 40-44.

Maustikam satsarurjäsyam pradesonnati bhūsitam sitagrum unnatagrivam pṛthūdaram sitam tathā.

Mandalani vicitrani sthanani vividhani ca gomotrakani citrani gatapratyagatani ca.

Tiraścinagatanyeva tatha vakragatani ca parimoksam praharanam varjanam paridhavanam.

Abhidravanam aplavam adhasathanam savigraham paravrttam apavrttam apadrutam apaplutam.

Upanyastam apanyastam aghātam sthālanam tuthā ētāni valgitānyāhurmauştike nrpasattama.

Compare Sukraniti, Chapter V, al. 153.

Me See Ibidem, II. 20; V. 45.

^{45.} Parigho vartulākārastālsmātrasutāravah

balaikasadhyasampatah tusmin jileyo vicaksanaih.

See Ibidem, II. 20; V. 46, 47.

Mayükhi kṛtayaṣṭisayat muṣṭiyukta naronnata kinkipisamyṛta citra phalika sahacarini.

Aghatam da pratighatam vighatam parimocanam abhidravanam ityete mayakhim pañca samáritah.

enormous tubes by means of gunpowder, it must have been a very formidable projectile.⁵²

These twenty weapons, belonging to the amukta division, are deposited in the second foot of the Dhanurveda.

All these thirty-two weapons were, according to tradition, taken from the body of the sage Dadhici. And this is the way how it happened:—

When the gods had been defeated by the demons in a great battle, which defeat they owed in some part to their insufficient knowledge of the Dhanurveda, they perceived on their flight the great sage Dadhīci, who was sitting near the place they passed. To him they entrusted their arms and continued their flight until they reached the high mountain Mandara, under whose bulky body they sought and obtained an asylum. Here they rested for many years, acknowledging Indra as their immediate superior. The sage meanwhile guarded well these weapons, which through his penance had all been changed into spikes, had entered his body and had become his bones. Thus a long time passed away, until the gods became at last anxious to recover once more their lost position and to try another fight with the demons. In their dejection they appeared before Brahma, the father of all beings, and requested him to help them. Brahma, moved to pity, imparted to them the Dhanurveda, together with the spells and all the necessary implements belonging to it. Supplied with the Dhanurveda, his four feet and his six angas, the gods went in search of Dadhīci and requested him to surrender to them their weapons. Dadhici was quite willing to do so, even though this kindness should cost him his life. provided he were allowed to ascend to the divine heaven.

⁵² See Ibidem, II. 20 ; V. 48, 49.

Sataghni kantakayuta kalayasamayi drdha mudgarabha caturhasta vartula tsaruna yuta.

^{49.} Gada valgitavatyosa mayeti kathita tava,

His request was granted, and Dadhīci advised the gods to let a cow lick his body until the bones which represented their arms were laid free. This was done. Out of the thirty-one bones of Dadhīci's body arose thirty-one weapons, and his backbone, the thirty-second bone, was transformed into the thirty-second weapon, Indra's thunderbolt. Provided with these weapons, which had assumed the shape of the bones from which they originated, the gods went to encounter the demons again, who could not withstand this time the assault of the gods.

But the mouth of the cow, as it had been guilty of the great sin of Brahman-murder, became henceforth an object of abhorrence to the pious; and up to this day orthodox Brahmans when meeting a cow, try to avoid looking at its head, and endeavour to let their eyes fall previously on the hinder part of its body.⁵⁴

One of the most important weapons, the khadga or asi, i.e., the sword, is not included in these two lists, because being created separately and specially by Brahma, it was regarded as a superior weapon altogether.

The high estimation in which the khadga was held by Vaisampayana is not apparent in the Agnipurana, where it is classed as a rather inferior weapon. Tradition says that it was given to Indra to be used against the Asuras. According to its nature the khadga belongs to the second or amukla class.

⁵⁵ See Ibidem II. 43-60; Mahabharata, V, 8695; IX, 2949, &c.

⁵⁴ See Ibidem, II. 54, 55.

Gomukham brahmahatyapi vivesa nrpasattama devasantosanat lokan sasvatan sa reiryayan.

Tadaprabhṛti loka vai na pasyanttha gomukham prātaḥ puruṣasārdula taddoṣagatamānasāḥ.

⁶⁵ See Agnipurana, 148, v. 5 and 8.

Khadgadikam amuktam ca niyuddham vigatayudham.

^{8.} Tani khadgajaghanyani bahupratyayarani ca.

The story goes, that when the gods were battling against the demons, there appeared through Brahma's agency on the top of the Himalaya mountain the deity of the sword, the Asidevatā, illuminating by its splendour the whole sky. the earth at the same time was shaking to its very foundation. The khadga was thus introduced into the world by Brahma for the sake of freeing the universe from the mighty demons. It was 50 thumbs long and 4 broad, and Brahma entrusted it to Siva or Rudra. After success had attended the undertaking. of Siva, he delivered the sword to Visnu, who on his side handed it over again to Marici and the other sages. One of the latter, the sage Reabha, gave it to Indra. Indra conferred it on the guardians of the quarters of the world, and these latter presented it to Manu, the son of the Sun, to help him in the administration of justice against evil-doers. Since that time it has remained in the family of Manu. The constellation of the khadga is the Krttika, its deity Agni, the head of its gotra Rohini, and its supreme deity is Rudra. Besides Nistrimsā it has the eight following different names: Asi, Višamana, Khadga, Tikenadharma, Durāsada, Śrīgarbha, Vijaya and Dharmamüla. It is handled in thirty-two different ways, and carried on the left side.

The third species of weapons, the Muktāmukta, those which may be thrown and not thrown are divided into two classes, into the Sopasamhāra or those which are connected with the withdrawing or restraining Upasamhāra and into the Upasamhāra themselves, which are the restrainers of the previous class.⁵⁸

Of the former there are 44 varieties, and of the latter 54.

Ibidem, 149, 7, 8; 160, 1-5; Compare Śukranit, Chapter V, £l. 164, 165; and Nitiprakašiks III, 1-40. The third book of the Nitiprakašiks is entirely devoted to the khadga. Compare ibidem also, II. 12a.

12a. Muktam bapadi vijišnyam khadgadikam amuktakam.

se The Sopasanhara and Upasanhara weapons are almost identical with the lists of arms presented by Visvamitra to Rama as we read in the Balakanda (in Schlegel's edition, cantos 29 and 30; in the old Calcutta edition,

The 44 Sopasamhāra weapons are the following:-

- The dandacakra (discus of punishment).
- The dharmacakra (the discus of right).
- 3. The kālacakra (the discus of Yama).
- 4. The sindrasakra (the discus of Indra).
- The sülavara (the spear of Siva).
- 6. The brahmatires (the head of Brahma).

canto 26). The latter edition contains more names than Schlegel's. The enumeration contained in Vaisampäyana's Nitiprakatika is independent of that of the Rāmāyaṇa, and for that very reason it is peculiarly interesting. It is therefore here given in the original; Nitiprakatika, II. 22-37.

- Dandacakram dharmacakram kälacakram tathaiva ca aindracakram éulavaram brahmaétrgam ca modaki.
- Šíkhari dharmapāšam ca tathā varuņapāšakam painākāstram ca vāyavyam šuskārdre, šikharāstrakam.
- Krauñcastram hayastrsam ca divyadivye'strasañjñike gandharvastram nandanāstram varsaņam sosaņam tathā.
- Prasvāpanaprašamane santapanavilāpane mathanam mānavāstram ca sāmanam tāmasam tathā.
- Samvartam mausalam satyam sauram mayastram ova ca tvaştram astram ca somāstram samhāram manasam tathā.
- Nagastram gerudāstram ca šailestkeštrasalījūike catušcatvāri caitāni sopasamhārakāņi vai.
- Vaksyami copasuhharan kramapraptan nibodhame yan jäätvä vairimuktani castrani samayisyasi (Prihu).
- Satyavan satyakirtisca rabhaso dhṛṣṭa eva ca pratihāraṭarascaivāpyavāmukhaparanmukhau.
- Drdhanabho' laksyalaksyavavilasoa sunabhakah. dasaksasiatavaktrasoa dasasirsasiatodarau.
- Dharmanabho mahanabho dundunabhastu nabhakah iyotisavimalau caiya nairasyakarsanavubhau.

- Yogandharah sanidrasoa daityah pramathanastatha sarcirmali dhṛtirmali vṛttiman rucirastatha.
- Pitryassaumanassascaiva vidhūtamakarau tathā karavīro dhauarati dhānyam vai kāmarūpakah.
- karaviro dhanarati dhanyam vai kamarapakah 34. Jṛmbakāvaraṇam caiva mohah kamarucistatha.
- varunah sarvadamanah sandhanah sarpanathakah.

 35. Katkalastram mausalastram kapalastram ca katkanam paisacastram ceti pancapyasurastrani hhupate.
- Satyavān sarvadamanah kamarūpastathaiva ca yogandharopyalaksyascapyasurāstravighātakāh.
- Cataścatvārimiat ete palicanyonyavimardanāḥ melayitvā ca palicaiat ekonāhyastraiamakāḥ.
- Sarvamocananama tu suprabhatanayo mahan muktamuktakhilasamo madvarat prathitah parab.

- 7. The modaki (the charmer).
- The éikharī (the pointed).
- 9. The dharmapasa (the noose of right).
- The varunapāša (the noose of Varuna).
- The painākāstra (the missile of Šiva).
- The väyavys (the missile of Vāyu).
- 13. The susks (the dry).
- The ārdra (the wet).
- The sikharāstra (the flaming missile).
- The krauñoāstra (the Krauñca missile).
- 17. The hayasīrsa (the horse-headed missile).
- 18. The vidyastra (the missile of knowledge).
- 19. The avidyastra (the missile of ignorance).
- 20. The gandharvästra (the gandharva missile).
- 21. The naudanāstra (the joy-producing missile).
- 22. The rarsans (the rainy missile).
- 23. The sosana (the drying missile).
- 24. The pravapana (the sleep-causing missile).
- The prasamana (the soothing missile).
- 26. The santāpana (the tormenting missile).
- 27. The vilāpana (the wailing missile).
- 28. The mathana (the churning missile).
- The mānavāstra (the missile of Manu).
- The sāmana (the conciliatory missile).
- 31. The tamasa (the missile of darkness).
- 32. The samuarts (the rolling missile).
- The mausala (the club-shaped missile).
- 34. The satys (the missile of truth).
- 35. The sawa (the missile of the sun).
- The māyāstra (the missile of illusion).
- The tväṣṭra (the missile of Viśvakarma).
- 38. The somästra (the missile of the moon).
- 39. The samhāra (the missile of restraining).
- The manasa (the spiritual missile).
- The nāgāstra (the missile of the serpent).
- The garudāstra (the missile of Garuda).

- 43. The sailastra (the rocky missile).
- 44. The iṣīkāstra (the reed missile).

The 55 Upasamhāra weapons are as follows:—

- The satyavān (the true).
- 2. The satyakirti (the truly-famed)
- 3. The rabbasa (the impetuous).
- 4. The darsts (the bold).
- 5. The pratikars (the warding off).
- The acdimukla (the downfaced).
- 7. The parānnukla (the averted face).
- The dydhandbha (the weapon with firm navel).
- 9. The alaksya (the imperceptible).
- 10. The lakeys (the perceptible)
- 11. The āvila (the turbid).
- 12. The sundbhaks (the weapon with good navel).
- The datākṣa (the ten-eyed).
- 14. The saturaktra (the hundred-mouthed).
- 15. The datatires (the ten-headed).
- 16. The satodara (the hundred-bellied).
- 17. The diarmandina (the weapon with the navel of right).
- 18. The mahānābha (the big-navelled).
- The dundunābha (the drum-navelled).
- 20. The nābhaka (the navelled).
- 21. The jyotiss (the luminous).
- 22. The vimals (the stainless).
- 23. The nairatys (the discourager).
- 24. The kartana (the emaciating).
- 25. The yogandhara (the united).
- 26. The sanidra (the sleeping).
- 27. The dailys (the fiendish).
- 28. The pramathana (the churner).
- The sdrcirmālā (the garland of energy).
- 30. The dhyts (the supporting).
- 31. The mali (the necklaced).
- 32. The erttims (the abiding).

- 33. The rucira (the glittering).
- 34. The pitrys (the paternal).
- 35. The saumanasa (the good-minded).
- The vidhula (the vibrating).
- 37. The makara (the monster).
- The karavira (the scymitar).
- 39. The diamarati (the desire of wealth).
- 40. The dhanya (the grain).
- The kāmarūpaka (the shape-assumer).
- 42. The jymbaks (the gaper).
- The āvaraņa (the protecting).
- 44. The mohs (the fascinating).
- 45. The kamaruci (following one's own wishes).
- 46. The varuna (the missile of Varuna).
- 47. The sarvadamana (the all-subduer).
- 48. The sandhana (the aimer).
- The sarpanāthaka (the missile belonging to the god of serpents).
- 50. The kankalastra (the skeleton missile).
- 51. The mausalästra (the pestle missile).
- The kāpālāstra (the skull missile).
- . 53. The kankana (the bracelet weapon).
 - 54. The paisacastra (the infernal missile).

The Sopasamhara weapons are contained in the 29th Sarga of Schlegel's edition of the Balakanda, while the Upasamhara weapons are mentioned mostly in the 30th canto.

The last five weapons are peculiar to the demons, while five other weapons are on the other hand most effective against these demons and cause their destruction; they are found under the numbers 1, 9, 25, 41, and 47.

These 44 Sopasarhhara and 54 Upasarhhara weapons represent the Muktamukta class, and they are deposited in the third foot of the Dhanurveda. They represent the belief so widely spread in India that the knowledge of certain spells endowed their owner with supernatural power, of which power these mysterious weapons are the outward token. To a person not within the pale of Brahmanism they appear like

mere creations of a fervid imagination. On the other hand the Indians do not stand alone in this belief in supernatural weapons, though it has been reserved to them only to define and to classify them methodically.

The last and most potent division, or the Mantramukta, is only represented by six weapons, but then they are so powerful that nothing can frustrate or subdue them. Their names are—

- 1. Vispucakra (the discus of Visnu).
- Vajrāstra (the thunderbolt).
- 3. Brahmāstra (the missile of Brahma).
- Kälspäšaka (the noose of death).
- Nārāyaṇāstra (the missile of Nārāyaṇa).
- Păsupatāstra (the missile of Pasupati).

These six weapons, which are projected by spells, reside in his fourth foot.⁸⁷

When Vaisampāyana has finished in his second chapter the enumeration of the weapons, which he assigns to the four different classes, and has given in the following three chapters an accurate description of the sword and all the thirty-two arms belonging to the two first divisions, he remarks that the efficiency of the weapons varies and is subject to great changes. In different ages and at different places the quality of a weapon is not the same, for the mode of construction and the material out of which it is made is of a different kind. Moreover much depends on the strength and the ability of the person who uses such arms in increasing, preserving or diminishing their efficiency.⁵⁸

In addition to these weapons others were in actual use, but they are said to be specially peculiar to the lowest or ⁵⁷ See Nitiprakššika, II. 40.

Vispucakram vajram astram brahmastram kalapasakum narayanam pasupatam nasamyam itarastrakaib.

See Nitiprakatika, V. 51.

Etani vikṛtim yanti yugaparyayato nrpa dehadardhyanusarena tatha buddhyanusaratah.

fourth age, the Kaliyuga, in which we live. Though these four ages or yugas are nowhere mentioned in the ancient Vedic literature, and though the constitution of the great or Mahāyuga is most probably an invention of a comparatively later period—perhaps after the commencement of the Kaliyuga had been connected with a certain date and the other yugas had been reckoned backwards from that date—it is a most singular phenomenon that many otherwise enlightened Brahmans really believe that they possess records from these previous three yugas.

The assumption of the depravity of the existing Kaliyuga and the superiority of the preceding ages is consoling to the feeling of those who no longer occupy the same exalted position as formerly, and who try to insinuate that the cause of the loss of their prestige is neither due to their own faults nor to the superiority of their rulers, but to the decrees of fate, to which every one is subject. We can here dispense with the presumption that the arms of any particular yuga are good or bad in the same proportion as the yuga itself is good or bad, the more so as a good and really auspicious age, from its intrinsic goodness, does not require any weapons to protect it; as in such a happy era righteousness and prosperity prevail everywhere.

But even in the Kaliyuga humanity is not so debased that no voice is raised against the use of cruel and barbarous weapons. On the other hand wherever and whenever arms are used, the object of their use must have been to apply force, either for offensive or defensive purposes. Remembering this fact one need not wonder that but little humanity is as a rule displayed in restraining the efficiency of weapons, and though, as we shall see, the ancient Hindu law books objected strongly to the use of certain arms, it is doubtful whether this prohibition was in reality ever enforced, for there exists a difference between uttering sentiments creditable to humanity and enforcing them in practice.

On the other hand we meet occasionally precepts which certainly do not exhibit a great amount of human kindness. Thus we read in the Pancatantra: "By a wise man should an enemy be killed, even if he be his son-in-law; if no other means be possible, he who murders commits no sin. A soldier who goes to the battle does not think about right and wrong; Dhṛṣṭadyumna was in olden times murdered in his sleep by the son of Drona." 59

The war machines which the ancient Indians used, whether they were made of metal or of stone, and out of which they hurled iron and lead balls at their enemies, were doubtless discharged by means of gunpowder. The existence of gunpowder is intimated by Vaisampāyana in his description of the nalikā and by the application of smoke-balls which, according to the commentator of Vaisampāyana, were really made of gunpowder. The ancient Hindus were also, as is well known, great adepts in the art of smelting and casting metals.

The old Hindus displayed a great ingenuity in inventing injurious and irritating compounds and refined expedients for hurling them amongst the enemy during a combat.⁶¹

Boiling oil has been used by many nations in different parts of the globe, and the old Indians believed also in its efficacy, but they used besides explosive oil. The resin of the Sal tree (Shorea robusta), which resin is also called kalakala, is recommended likewise. The casting of melted sugar is mentioned as well as that of heated sand. Pots filled with venomous snakes mixed together with honey, spikes and big stones, saws, smoke-balls, burning husks of corn, and other injurious preparations were frequently employed in India.

⁵⁹ See Pafficatantra, I. 299, 300.

⁶⁰ Dhumagulika is explained by Curpagola, powderball.

⁸¹ See Nitiprakasika, V. 52.

Yantrani lohastsanam gulikakşepakani catatha copalayantrani kṛtrimanyaparani ca.

The soldiers of Duryodhans, when encamped in Kurukeetra, had at their disposal similar implements of war.⁶²

These weapons and mixtures were probably used more generally during sieges and in street-fights than in open combat.

The weapons just now enumerated and many others of the same objectionable and cruel type are ascribed to the depravity of the Kaliyuga, when war is conducted in an unfair, mean, and deceifful manner. The existence of many uncivilized nations of the lowest origin contributes greatly to the degeneration of the times. Among the despicable peoples thus enumerated are found the Huns, Pulindas, Šabaras, Pahlavas, Šakas, Malavas, Varvaras, Konkanas, Āndhras, Colas, Pāndyas, Keralas, Mlecchas, Candalas, Švapacas, Khalas, Mavellakas, Lalitthas, Kirātas, and Kukkuras. To add insult to injury, and to show the low position of these nations, the Hindus said these tribes originated from the vagina of a cow.

⁴² See Ibidem, V. 53, 54.

Kutayuddhasahayani bhavisyanti kalau nrpa taptatailam sarjarasam gudalalo gravaluka.

Madhusasivişaghatah silakani brhacchilah krakaca dhümagulikah tuşangaradikam tatha.

Compute, Mahabharata, Udyoguparva, Adhyaya, 155, 5-7.

Sakacagrahavikşepāh satailagudavālukāh sāšīviṣaghatāh sarve sasarjarasapāńsavah.

Sanghataphalakah sarve sayogudajalopalah sasalahhindipalasea samadoechistamudgarah.

Sakāndadandakāh sarve sastravisatomarāh. sastrpapitakāh sarve sadātrānkušatomarāh.

⁴³ See Thidem, V, 55-57.

Hünäh pulindah éabara varvara pahlavah éakah malavah kockana hyandhrah colah pandyah sakeralah.

Mleccha goyonayaseanye candalah svapacah khalah mavellaka lalitthasea kiratah kukkurah tatha.

Papa hyete katham dharmam vetsyanti ca viyonayah sankaryadoşanirata bhavişyantyadhame yuge.

^{**} Most of these names appear also in the Mahabharata and Ramayana. The Hindus call the modern Europeans, Huss, this expression most probably arose from the idea that the ancient Hunnish invaders came also from Europe. The 14th Chapter of the Harivamsa contains an enumeration of many barbarous nations.

CHAPTER II.

ON THE AUTHENTICITY OF THE SUKRANITI.

The reputed author of the Sukranīti-a chapter from which on the army organisation and the political maxims of the ancient Hindus we shall give further on in these pages-is Usanas or Sukra. He is also called Maghabhava, Kavi. Kāvya, Bhārgava, Şodaśārcis, Daityaguru, and Dhisnya.65 According to some he is the son or descendant of Bhrgu, and, therefore, he is named Bhargava; to others he is known as Kavi or the poet, and to others also as Kavya, the son of Kavi, a son of Bhrgu. He is regarded as the regent of the planet Venus or Sukra; and the Sukravara or Friday is named after him; his connection with this planet is also evident in his names Maghābhava, Sodašārcis, and Dhiṣṇya. Moreover heis the preceptor of the Daityas or Demons and is called therefore Daityaguru. Brhaspati, the preceptor of the gods and the regent of the planet Jupiter, is like Sukra the author of a famous Dandaniti, or a work on civil and military administration. This work of Sukra is highly praised in the Kāmandakīya, as containing the principles of all sciences, and its slokas are very often found in the Kamandakīya.00

Throughout Indian literature Sukra is always upheld as one of the greatest sages, his sayings are carefully noted and quotations from his Essence of Polity or Nitisara are met with in the most ancient and celebrated writings.

September Comment of the September September Comment

⁶⁵ See "Śukro Maghabhavah Kavya Usana Bhargavah Kavih Şodnsarcir Daityagurur Dhisoyah," in Homacandra's Anckärtharatnamalā, II, 33 and 34; compare Amarakosa, I. 1, 26; and Halayudha's Abhidhanaratnamala, I, 48; &c. &c.

es See Kamandaktya, II, 4, 5.

Varta ca dandanitisca dve vidve ityavasthite lokasyarthaprudhanatvat sisyah sumpurodhasah.

Ekniva dandanttistu vidye tyansanası sthitih tasyam tu sarvayidyanam arambhah samudahrtah.

The reason of calling Sukra's work a Dang. wift is explained in Sukrantti, I, 167, as follows:—

Damo danda iti khyatastasmat dando mahipatih tasya miirdandamitirnayanat miirucyate.

The author of the Sukranīti is very frequently mentioned in the Mahābhārata. In one place we read that Brahma wrote the first Dandanīti which contained the enormous number of 100,000 chapters. This bulky volume was reduced by Sankara or Siva into a code called Visālākṣa which still comprehended 10,000 chapters. Indra reduced the Visālākṣa into the Bāhudandaka which reached the respectable number of 5,000 chapters. Indra was followed by Brhaspati, whose Bārhaspatya amounted to 3,000 chapters. Kāvya or Usanas thinking that the life of man was too short to digest such enormous books limited his Nītisāra to 1,000 chapters. It was thus Usanas, who made the Dandanīti accessible to men.

er See Mahabharata, Santiparva, Rajadharma, LIX, 28, 29, 76-87.

Tan uvaca suran sarvan Svayambhūr bhagavānstataḥ áreyo'ham cintayisyami vyetuvobhih surarsabhāh.

Tatodhyayasahasrapam satam cakre svabuddhijam yatra dharmastathaivarthah kamascaivabhivarnitah.

Etat kṛtva subham sastram tatah subhagavan prabhuḥ devan uvaca samhratah tatah Sakrapurogaman.

Upakaraya lokasya trivargasthapanaya ca navanitam sarasvatya buddhiresa prabhavita.

Dandena sahitahyesa lokaraksanakarika nigrahanugraharata lokan anucarisyati.

Dandena niyate cedam dandam nayati va punah dandanttiriti khyata trilokan abhivartate.

Şadgunyagunasaraişā sthasyatyagre mahatmasu dharmarthakamamokşāsca sakala hyatra sabditab.

Tatastan bhagavan nītim pūrvam jagraha Šankaraḥ bahurūpo višalākṣaḥ šivassthāņurumāpatiḥ.

Prajanam ayuşohrasam vijüäya bhagavan Sivah sañcikşepa tatah sastram mahartham brahmana kṛtam.

Višalaksam iti proktam tad idam pratyapadyata dašadhysyasahasraņi Subrahmanyo mahātapāḥ.

Bhagaván api tacchástrum sañciksepa Purandarah, sahasraih pañcabhis táta yaduktam bahudandakam.
 Adhyavánam sahasraistu tribhireva Brhaspatih

saficiksepesvaro buddhya Barhaspatyam yaducyate.

Adhyayanam sahasrena Kavyah sanksepam abravit taochastram amrtoprajão yogscáryo mahayajáh,

Evam lokanurodhena sastram etanmaharşibhih sankşiptam syurvijāsya martyanam hrasam eva ca

According to the Nitiprakāšikā Brahma, Rudra, Subrahmanya, Indra, Manu, Brhaspati, Šukra, Bhāradvāja, Gauraširas and Vyāsa were authors of works on polity. Brahma's Dandaniti contained 100,000 chapters, that of Rudra 50,000, that of Subrahmanya 25,000, that of Indra 12,000, that of Manu 6,000, that of Brhaspati 3,000, that of Šukra 1,000, that of Bhāradvāja 700, that of Gauraširas 500, and that of Vedavyāsa 300 chapters. 68

In the second Śloka of the Śukranīti we read that Brahma's work consisted of ten millions of double verses, which would give to each chapter an average length of 100 Ślokas.⁶⁰

Just as the Manavadharmasastra does not contain as many verses, as are said to have been originally in it, so also is the Sukraniti we actually possess by no means as long as is indicated in the Mahabharata. In fact at the end of the 4th section the Sukraniti is declared to be only 2,200 Ślokas

^{**} See Nitiprakasika, I, 21-28.

Brahma mahesvarah skandascendrapracetaso manuh brhaspatisca sukrasca bharadvajo mahatapah;

Vedavyšsašca bhāgavān tathā gauraširā munih ete hi rājašastrāņām praņetārah parantapāh.

Laksadhyayan jagau brahma rajasastre mahamatih pañcasat ca sahasrani rudrah sanksipya cabravit.

Pañcaviniat sahasrani skandas sanksinya cavadat dasadhyayasahasrani dvisahasra ca vasavah.
 Pracelasamanuscani saisahasranyathabravit

trinyadhyayasahasrani brhaspatiruvaca ha.

Kavyastu tat samalodya cakre'dhyayasahasrakam saptadhyayasatam sastram Bharadvajastathabhanat.

Munirgaurasirascapi pañoadhyayasatam jagau vedavyasastu bhagavan tat sanksipya mahamatih

Šatatrayādhyāyavatīm nītim cakre mahāmate aanksiptam āyurvijāaya martyānām buddhidosatah.
 Sas Šukrantti, I, 2-4.

Porvadevairyathanyayam nitisaram uvaca tan fatalaksasilokamitam nitisastram athoktavan.

Svayambhūr bhagavan lokahitārtham sangraheņa vai tatsāram tu Vasisthādyairasmābhirvṛddhihetave.

Alpayubhubhṛtādyartham sankṣipiam tarkavistṛtam.

long, and it speaks well for the preservation of this ancient work, that though the MSS differ as to their length in some way or other, the variations in them are not very great. One MS contains indeed exactly 2,200 slokas, and all MSS. I possess contain the above verse in question, which thus defines the proportions of the Śukranīti.¹⁰

In the beginning of the 58th Chapter of the Rajadharma the name of Kavya occurs also as one of the authors of a Dharmaśastra, and he is likewise mentioned as such in the second Śloka of the Pańcatantra. The Kamandakiya and other similar works allude repeatedly to our author. It is a peculiar coincidence that the reason for composing the Śukranīti is the same both in the Śukranīti and in the Mahabhārata. If the former were a later production the cause of this agreement would be evident, but there are many good grounds for the supposition that this is not the case, and that the quotations from Śukra's work on Polity found in such ancient works as the Mahābhārata, Harivamsa, Kāmandakīya, Pañcatantra are genuine quotations. A few examples taken at random will be sufficient for our purpose.

The Mahābhārata quotes in the 56th Chapter of the Rājadharmānušāsana the following as the saying of Usanas: "A law abiding king should in the exercise of his duties chastise a Brahman, who has even read the whole Veda, who

²⁰ See Sukraniti, IV, VII. 345.

Manyadyairadrto yorthastadartho Bhargavena vai dvavimaatisatam sloka nitisare prukirtitah.

⁷¹ See Rajadharma, LVIII, 1-4.

Ete te raja dharmanam navanitam Yudhisthira Brhaspatirhi bhagavan nanyam dharmam prasamsati.

Visalakşasca bhagavan Kavyascaiva mahatapah sahasrakso Mahendrasca tatha Pracetaso Manuh.

Bharadvajašca bhagavan tatha Gauraširā munih rājašāstrapruņetāro brahmaņya brahmavadinah.

Rakṣām eva prašamsanti dharmam dharmavṛtam vara.

See also Paticatantram, I, 2.

Manave Vacaspataye Sukraya Parasaraya sasutaya Canakyaya ca viduse namo'stu nayasastrakartybhyah.

approaches with uplifted weapons and intent to murder. The king knowing the law should certainly protect the law which is being broken. By such an act he is no law-breaker; for fury recoils on fury." Our Sukraniti expresses this decision (IV, VII, 259) as follows: "He who has raised a weapon against an approaching assassin, even if this be a Vaidika Brahman (Bhrūna), and has killed him, should not be considered as a murderer of a Vaidika Brahman; if he has not killed him, he should be regarded as such." "2

As the sloka of the Sukranīti contains a more difficult reading and the rare term Bhrūna in the sense of Vaidikibrahman occurs here, which is, as it were, explained in the Mahābhārata by "Vedāntapāraga," there seems to be no doubt which of the two versions is the earlier."

The 57th chapter of the Rajadharma begins with another quotation of Usanas. He is said to have declared that "the earth swallows these two, namely, a king who does not oppose an enemy and a Brahman who does not travel about, like a snake swallows the animals living in holes."

⁷⁹ See Mahabharata, Rajadharma, LVI, 27-29.

Slokau causanaes gitau puratata maharsina tau nibodha maharsia tvam ekagramana nrpa.

Udyamya šastram ayantam api vedantaparagam nigyhniyat svadharmena dharmapeksi naradhipah.

Vinasyamanam dharmam hi yo'bhirakset sa dharmavit na tena dharmaha sa syat manyustanmanyum rochati.

Compare this with Sukraniti, IV, VII, v. 259.

Udyamya sastram ayantam bhrupam apyatatayinam ihhatya bhrupaha na syat ahatva bhrupaha bhavet.

Compare further with these slokas, **Mose, VIII, 350, 351.

That Bărüpald means a Vaidika-Brahman murderer is-clear from Kullokabbaiţia's Commentary to Manu, VIII, 317 (annade bhrunaha marşti patyau bharyapacarint), for he says there: "Brahmaha yab tataambandhiyo'nnam atti tamin asau svapapam sahkramayati. Bronahannabhoktuh papam bhavattti. Etad atra vivakṣitam na tu brahmaghnah papam nafyati tatha bharya vyabblicărini jarapatim kṣamamane bhartari papam samaloṣayati."

Compare also Némérihavainemils by Irugapadandadhinatha, 11, 125, under the word bhrana "Bhranorbhake strainagarbhe garbhinyam árotriye dvije."

The Sukranīti contains (IV, VII, 242) this very sloka.74

The Harivania ascribes to Usanas the wise prescription, that one should never confide in a person whose trustworthiness one has not proved previously, and even to be cautious in giving confidence to a trustworthy person, as the evils of misplaced confidence are serious. This very sentiment, though not quite in the same words, may be found in Sukranīti III, 47-49.73

It is peculiar that the Pancatantra refers these verses on the acquisition of friends to a passage in the Sukraniti, and here,

74 See Rajadharma LVII, 1, 2.

 Bhagavan Usana hyaha slokum atra visampate tad ihaikumana rajan gadatastannibodhame.

 Dvāvimau grasate bhūmih aarpo vilašayān iva rājānam cāviyoddhāram brāhmaņam capravāsinam; in its stead we read in the Śukrantti, IV, VII, 242: Rājānam cāpayoddhāram brāhmaņam capravāsinam ningilati bhūmiretau aarpo vilašayān iva.

* See Harivarhéa XVIII, 127-131.

 Kusauhrdena visvasah kudesena prajivyate kurajani bhayam nityam kuputre sarvato bhayam.

 Apakāriņi visrambham yaḥ karoti narādhamaḥ anātho durbalo yadvannaciram sa tu jīvati.

 Na višvaset avišvaste višvaste nativišvaset višvastat bhayam utpannam mulanyapi nikrintati.

 Rajasovoju višvāsam garbhasankramitoju ca yah karoti naro mūdho na ciram sa tu jīvati.

 Abhyunnatim prapya nrpah pravaram kitako yatha sa vinasyatyasandoham ahaivam Usana nrpa,
 See also Pañcatantram II, 45, and Kamandakiya, V, 88, 89,

The Sukraniti expresses in the following slokas, III, 75-80, the same

 Bhṛṭyo bhrātāpi vā putrah patni kuryāt na caiva yat vidhāsyanti ca mitrāņi tat kāryam avišankitam.
 Ato yatota tat prēptyai mitralabdhirvarā nṛṇām

natyantam visvaset kañoit visvastam api sarvada. 77. Putram va bhrataram bharyam amatyam adhikarinam

dhanastri rajyalobho hi sarvoşam adhiko yatab. 78. Pramanikam canubhutam aptam sarvatra visvaset

viávasitvätmavadgüdhastat käryam vimréet svayam. 79. Tadväkyam tarkato nartham viparitam na cintayet

catuşşaştitamamsam tannasitam kşamayet atha. 80. Svadharmanttibalavan tena maitrim pradharayet danairmanaisca şatkaraih supülyan püjayet sada. III, 76, we find them occurring in connection with this particular subject, the acquisition of friends.⁷⁶

The following Śloka in the Harivamśa, which is found a little modified in the Pañcatantra, III, 256, is also ascribed to Uśanas:—" The residue of an enemy, of debt, of fire, O prince! (although scattered) when united, may grow again; therefore one should not allow a residue to remain." The Śnkranīti contains nearly the same idea in the same words.

The Kāmandakiya (XII, 67) says that Manu mentions in his law book, that the number of ministers at the court of a king amounts to 12, that Brhaspati says it amounts to 16, and that Ušanas fixed it at 20.78

In the Sukraniti II, 69 and 70 are as a matter of fact 20 ministers mentioned; e.g., the family priest, vicegerent, chief secretary, war minister, diplomatist, chief justice, learned adviser, finance minister, councillor and ambassador; each of these 10 has a substitute, so that the entire number of ministers amounts to 20.79

2011年、そのこのでは国際の国際の関係の関係が大力があるというないのでは、これのの国際のでは、国際の国際の国際の国際の関係を

²⁶ See Pañcatantram, II, 47. Sukṛtyam visouguptasya mitrāptibhārgavasya ca bphaspater aviāvāso mitisandhistridhā sthitah.

⁷⁷ See Harivaméa, XVIII, 136, 137.

Na ca éeşam prakurvanti punarvairabhayat narah ghatayanti samulam hi érutvemam upamam nroa.

Satruseşam runseşam seşam agueses bhünrpa punarvardheta sambhüya tasmat seşam na seşayet.
 Genpare Sukraniti, III, 101–103.

Sarpo'gnirdurjano raja jamata bhaginisutah rogah satruraavamanyopyalpa ityupacaratah.

Krauryat taikapyadusavabhavat svamitvät putrikabhayat svapurvajapindadatvat vrddhibhitya upacaret.

^{103.} Rnašesam rogašesam šatrušesam na raksayet

yacakadyaih prarthitassan na tikspam cottaram vadet.

Dvadašeti Manuh praha sodaseti Brhaspatih.

Užana vimiatiriti mantriņām mantramaņdalam.

⁷⁹ The slokas in question are as follows:-

Purodhāca pratinidhih pradhānassacivastathā mantrica pranvivākaāca paņditaāca sumantrakah;

Amatyo duta ityeta zajňah prakrtayo dasa dasamamanisadhikah purvam dutantah kramasah smrtah.

The Kamandakiya (VIII, 22-23) ascribes to Usanas the observation that the sphere round a king consists of twelve other kings of whom 4 are enemies, 4 friends and 4 neutrals.

A king X, e.g., is surrounded by three circles A, B, C, and in these circles resides one king in each of the four directions of the compass. Immediate neighbours are always hostile to each other, thus a king of the A line is an enemy to his neighbour in the B line, and the same feeling animates B towards his neighbour in C. As X is an enemy to the kings of the A line and the latter are enemies to the kings living in the B circle, X and the B kings become friends by being bound together by their hostility to the A kings, and X and the C kings are neutrals as, they have no interest in common, being too distant from each other. This very idea is well expressed in the Sukraniti, IV, I, 17-18.

The whole Sukranīti is divided into four sections with a

fifth supplementary section at the end.

The first section treats on the duties of a king; the second on the position of the crown prince; the third mainly on income and expenditure on servants and wages; the fourth is divided into seven chapters, treating respectively 1, on friendship and (enmity), 2, on the treasury, 3, on administration, 4, on revenue, arts and science, 5, on social laws, 6, on fortresses, and 7, on the army.

This last chapter is given afterwards entirely. It begins with a definition of the word army, goes on to state the different character of the troops; the mode of their movements, whether they march on foot, ride on horses and

⁶⁰ See Kamandakiya, VIII, 22, 23.

Udasino madhyamasca vijigteostu mandalam usana mandalam idam praha dvadasarajakam.
 Dvadasasam narendranam arimitre prihak prihak;

and Sukrantti, IV, I, 17, 18.

Asamantat caturdikşu sannikṛṣṭaśca ye nṛpaḥ tatparāstatparā ye'nye kramat hīnabalārayaḥ.

Satrudasınamitrani kramat te syustu prakrtan arirmitram udasıno'nantarastatparasparam.

elephants, or are driven in carriages. Then follows a description of the various kinds of soldiers, and afterwards a description of the animals and conveyances used for army purposes. This is succeeded by a classification of the arms used in warfare and such arms are described. Among these are mentioned firearms and a full account is given of the manufasture of gunpowder. These two subjects will be discussed at large hereafter. After the description of weapons is finished, the different modes of warring, marching, and treating are gone into, and the political conduct of the king is described at length. No undue preference is given to any peculiar subject in particular, and this, if no other proof had been forthcoming, speaks for the genuineness of the work.

It is hardly imaginable that a work, which contains so many important revelations about the ancient state of the civil and military administration of India, and which is, as we have seen, often quoted by works of undisputed antiquity and genuineness—quoted too in a manner which precludes forgery, as the quotations are seldom quite literal—should have been written for the sole object of braggadocio, in order to prove to Europeans the mental superiority of the ancient Hindus by ascribing to them the original invention and manufacture both of gunpowder and firearms, and that the very object of the forgery, its raison d'être, should have been frustrated afterwards by keeping the work so zealously secret that except to a few initiated pandits, it was totally unknown to the public!

On the other hand would it not be a subject worthy of investigation for those who doubt the authenticity of the Sukranīti to prove its spuriousness, and to refute the statements brought forward in favor of its genuineness? Mere assertions do not possess any scientific value.

All Gunpowder and firearms are incidentally mentioned also in other parts of the Sukraniti; but in this chapter both are described fully.

The language is simple, terse and antiquated, and in many instances the age of the work manifests itself in this respect. The Sukraniti contains also a large number of half verses and this is another circumstance speaking for its antiquity. In some places it contradicts the precepts of Manu, and as it is not likely that any Hindu would dare to oppose that most venerated law book, we may conclude that the compilation of our work is anterior to or at least contemporary with our revision of Manu's Dharmasastra.

Sukra is regarded as the preceptor of the Demons, and though this tradition should be received oum grano saks, nevertheless the work written by or ascribed to him may have been regarded as the special law book of the warriors or Kşatriyas. It was also for this reason originally not much patronised by the Brahmans, but now it is held in great respect by them.⁶²

CHAPTER III.

ON THE USE OF GUNPOWDER AND FIREARMS IN. GENERAL.

No invention has, within the last five hundred years, been so influential in shaping the destinies of nations as the introduction of gunpowder and of firearms into warfare. The fate of whole realms depended, and depends to a certain extent even now, on the proficiency attained by the comba-

⁸³ A copy of the Sukraniti was bought for the Government MSS. Library by my predecessor Mr. Sesagiri Sastri as far back as 1871, but as long as I could consult only this copy, I could not well attempt to print it. Since that time I have received three more Manuscripts of this work from other parts of the country, which, though coming from different places and being written in different characters, are in very close agreement. A printed specimen published a few years ago by H.H. the Holkar has also come into my hands, and though it is a print abounding with mistakes, it serves me as another Manuscript.

The Sukraniti is now very scarce, and its owners do not like to part with it. I have therefore been obliged to get two MSS. copied, as I could not obtain the originals.

tants in the manufacture of better guupowder or of projectile weapons of superior quality.

When missiles despatched from projectile weapons by means of gunpowder easily penetrated the knights clad in their strongest suit of armour, while the persons who used those arms were quite beyond the reach of their physically perhaps stronger foes, no wonder that armour was discarded in course of time, and the mediæval knight, who had hitherto without much difficulty maintained his supremacy single-handed against a multitude, found his former superiority gone, and disappeared gradually from the scene. Fortresses, which, before the invention of gunpowder, had been regarded as impregnable, lost their reputation as safe strongholds, and new schemes and practices had to be devised to obviate the difficulties of the altered situation.

Slight improvements in the construction or manipulation of firearms produced often most important alterations in the political history of the world. Frederick the Great is said to have owed in his earlier campaigns many of his victories to the quicker mode of loading adopted by the Prussian army; and it is not so long ago that we curselves have witnessed a rearrangement of the map of Europe, partly effected by means of superior weapons being used by one nation against another. It is therefore natural that a general interest should be more or less taken in all important advances made in this subject, which, if well studied and applied, provides a nation with the means of ensuring its freedom, independence, and supremscy, so long as actual strength is regarded as the only recognized claim to independent political existence.

The invention of gunpowder has been ascribed to different individuals belonging to different countries, and as the question as to its authorship and antiquity is still an open one, we shall discuss this mooted point and shall endeavour to prove that the oldest documents mentioning and describing gunpowder are found in India and written in Sanskrit, and that the use of gunpowder and its application to the discharge of missiles from projectile weapons was a well known fact in ancient India, corroborating so far the opinion of those who always pointed out India as the original seat of its invention. The question whether China received the knowledge of gunpowder from India, or vice versā, cannot be touched here, as there do not exist any trustworthy documents bearing on this question. No Chinese work on this question can, with respect to antiquity, be compared with the Sukranīti, so that even if the Chinese should have independently invented gunpowder, the claim as to priority of invention will certainly remain with India.

A Franciscan monk, Berthold Schwarz, whose real name was Constantin Ancklitzen or Anklitz, is generally, especially in Germany, credited with the invention of gunpowder, which, according to tradition, was made at Freiburg in the Breisgau about the year 1330. No doubt Black Barthel, der schwarze Barthel, as he was popularly called, dabbled in alchemy and was very fond of chemical experiments, during one of which he was blown up and nearly killed by an explosion of a mortar he was experimenting upon. Eventually he was accused of practising magic and necromancy and sent to prison. A grateful posterity erected in his honour a statue on the spot where the Franciscan Convent of Freiburg had once stood; an honour which he may have richly deserved for many reasons, but surely not for being the original inventor of gunpowder.

Many years previously to Berthold Schwarz, another Franciscan monk, Roger Bacon (1214-94), the Doctor Mirabilis of Oxford, had already pointed out the peculiar qualities of saltpetre, as exemplified in the action of gunpowder. Like every chemical scholar in those times he became an object of clerical suspicion, was incarcerated by his superiors on the plea of practising forbidden magic and

though for a time released by Pope Clement IV, he was again imprisoned under Pope Nicholas III. Bacon suggests that gunpowder should be used in war, as it would supply a powerful means for the destruction of hostile armies. He notices particularly the thunderlike noise and lightninglike flash at the time of its explosion; its application to crackers and fireworks is a subject, he was well acquainted with. He states in his book on the secret works of art and nature two of the principal ingredients which compose gunpowder—saltpetre and sulphur—but not wishing, according—to the mysterious inclination of those days, to make the secret known, he uses in his prescription the obscure expression lura nope cum-ubre, which has been later ingeniously found out to stand for carbonum pulcere. ³³

It is now generally supposed that Roger Bacon learnt the secret of the manufacture of gunpowder while he was travelling in Spain, where it was pretty well known among the Moors, who were not only the most learned nation at that period, but who, through religious and national tradition were intimately connected with their more eastern co-religionists and compatriots. An Arabic treatise on gunpowder written in 1249 is up to this day preserved in the Library of the Royal Escurial.

In the National Library at Paris is preserved a work ascribed to one Marcus Graeous. It was published at Paris in 1806 as Liber ignium ad comburendos hostes, auctore Marco Graeco. About the nationality and the life of this Marcus Graecus nothing is known for certain. According to some he lived in the 9th, according to others in the 13th

as "Sod tamen salis petras, lara nope cam abre et sulphuris, et sie facies tenitrum et coruscationem, si seins artificium," in Roger Bacon's work "De secretis operièsis Artis et Naturas et de sullitate magias." At another place he alludes to fireworks: "Ex hoc ludiero puerili qued fit in multis mundi partibus scilicet ut instrumento facto ad quantitatem pollicis humani ex hoc violentia salis qui salpetras vocatur tam horribilis senus nascitur in ruptura tam modiesce pergamenae qued fortis tonitru rugitum et coruscationem maximam sui luminis jubar excedit."

century. The accuracy of the name is even doubtful, as he is also called Marcus Gracchus instead of Graccus. If the latter appellation be the more correct one, it might perhaps be surmised that the work was originally written in Greek. Saltpetre occurs three times in his book, as sal petrosum; lapis qui dicitur petra salis, and as sal petrum. According to Marcus Graccus the composition of gunpowder is two parts of charcoal, one part of sulphur, and six parts of saltpetre.

Towards the end of the seventh century the architect Kallinikos of Heliopolis, when Constantinople was besieged by the Arabs in 668, manufactured big tubes made of iron or of other metals, formed like big beasts with gaping jaws, out of which were thrown iron, stones and combustibles. In consequence of the havoo caused by these projectiles the siege of the city was raised. The Greeks kept, it is said, the secret of the composition for four centuries, when it was betrayed to the Saracens, who availed themselves of it during the crusades at Jerusalem and also at Damietta. If the ingredients are rightly mentioned, e.g., by the Byzantine princess, Anna Komnena, who wrote the history of her father Alexios. they consisted only of resin, oil, and sulphur, and not of saltpetre. As Kallinikos hailed from Heliopolis, the place otherwise known as Baalbee, and as the Greek fire seems to have been a liquid, the most important ingredient of which was naphtha, which was well known to, and was much made use of by the Eastern nations,-as it is found near Baku on the Caspian Sea, (where the gas, as it escapes from fissures in the earth in the neighbourhood of the oilsprings, has been burning unintermittedly for centuries and is worshipped by Parsees,) in the island of Tchelekin on the other side of the Caspian Sea opposite to Baku, in Mesopotamia, in Kurdistan, in North India, and in China-it is probable that Kallinikos only introduced this powerful com-

See John Beckmann's History of Inventions and Discoveries under the article "Saltpetre, Guespouder, Aqua forcia."

bustible into Western warfare, and that it was before his time employed in the East. At all events it was a most powerful preparation for the destruction of the enemy, and the terror it spread among the troops of Louis IX before Damietta is graphically described by contemporaries. It seems to have even been used in European wars, for, according to Père Daniel, the king Philip Augustus of France had brought home some of it from Acre, and used it at the siege of Dieppe against the English ships there at anchor. ³⁵ It is said that Napoleon the Great became acquainted with the real composition of the Greek fire, but that he pronounced it inapplicable; one of the chief reasons for his decision being probably the fluid state of the combustible.

There exists an old tradition, according to which the Arabs possessed at an early date a knowledge of the manufacture of gunpowder, and that they obtained it originally from India, with which country they had an active commercial intercourse. They are even said to have improved on the original manufacture. That the Arabs received their earliest gunpowder supplies from India, and that this country was the original seat of its invention was very strongly urged so early as the end of the last century by M. Langlès in a paper read in the French Institute in 1798. This opinion is also upheld by Johann Beckmann (1739-1811), whose well known "History of Inventions and Discoveries" (Beiträge zur Geschichte der Erfindungen) has passed through many English editions. He says there: "In a word, I am more than ever inclined to accede to the opinion of those who believe that gunpowder was invented in India, and brought by the Saracens from Africa to the Europeans; who, however, improved the preparation of it, and found out different ways of employing it in war, as well as small arms and cannons."

^{*}See Projectile Weapons of War and Explosive Compounds; by J. Scoffern, M.B., third edition, London, 1858, pp. 50-60.

Having discussed so far the question as to the invention of gunpowder, we now turn to its application in war by means of projectile weapons. The first country in Europe where such projectile weapons were used was Spain. They are mentioned by Arabian writers as far back as 1312, and were used in 1323 at the siege of Baza. The French seem to have employed them since 1338 at first for dismantling castles and fortifications only, and not in the battle field as Edward III of England is said to have done in 1346 at Creey. The French writers seem to have been indignant at the employment of such destructive arms against human beings, for one of them says: "On ne faisoit point encore usage en France en 1347 de cette arme terrible contre les hommes; les François s'en étoient bien servis en 1338, pour l'attaque de quelques chateaux, mais ils rougisscient de l'employer contre leurs semblables. Les Anglois, moins humains, sans doute, nous devancèrent et s'en servirent à la célèbre bataille de Creci, qui eut lieu entre les troupes du roi d'Angleterre, Edouard III, qui fut si méchant, si perfide, qui donna tant de fil à retordre à Philippe de Valois, et aux troupes de ce dernier : et ce fut en majeure partie à la frayeur et à la confusion qu'occasionnèrent les canons, dont les Anglois se servoient pour la première fois, qu'ils avoient postés sur une colline proche le village de Creci, que les François durent leur déroute."88 These projectile weapons were formed like tubes and were therefore called cannons from canna, a reed. In German they were known as Rohr, which word has the same meaning. The small firearms were originally without a stock, and as they were very heavy, they used to be placed on a fork when they were discharged. The arquebuse with a wheel was first used by Emperor Charles V and Pope Leo X in the year 1521 at the siege of Parma against Francis I, King of France.

ss See Projectile Weapons of War, p. 117.—In the Library of Christ Church, Oxford, is preserved in a beautifully illuminated Manuscript, which dates from 1336, and which has been in the possession of Edward III, the picture of an armour-clad warrior, who fires a bottle-shaped cannon.

The same Martin Bellay who states this fact, further informs us that the German horse or *Reiter* were the first, who were armed with pistols, and that those troopers were thence called pistoliers. *Musket* is a still later weapon. It has got its name from the French mouchet (Latin muschetus, sparrow hawk).⁴⁷ The Duke of Alva is reported to have first used them in the Netherlands.

The gun was originally fired by the simple application of a lighted match. The clumsiness and uncertainty of this procedure especially during storms and rains suggested improvements. At first a cock was added to give security to the hand, afterwards a firestone was inserted into this cock and a small wheel was fastened to the barrel. The wheel lock is said to have been invented in 1517 at Nürnberg in Bavaria. The firestone first used was not the flint which was employed later, but the pyrites or marcasite. The match was nevertheless not altogether discarded, as the stone often missed fire, and it was retained together with the wheel. Flint locks were of a far later origin. They were first used in 1687 by the Brunswickers, and they were introduced into England under William III during the years 1692-93. These continued improvements, to which we may add the modern percussion lock, the needle-gun, and the breech-loader, were mainly necessitated by the perilous and defenceless position a soldier was in as soon as he had discharged his gun against an enemy, who chose this moment as convenient to attack him. The greater the rapidity in loading, the greater is the efficiency of the fireweapon.

If we now turn our attention from the West to the East we find that powder and firearms seem to have been much earlier used in the latter than in the former.

It is recorded that in the battle near Delhi fought between Tamerlane and Sultan Mahmud, the latter opposed his

²⁷ According to others it was invented at the end of the fifteenth century by one Moketta of Velletri, after whom it is said to have been named.

enemy with 10,000 horsemen, 40,000 men on foot, and a great number of elephants clad in armour. On the top of those elephants were big howdahs from which the sharpshooters flung fireworks and rockets on the troops of Timur: and on the sides of those elephants marched "des jetteurs de pots à feu et de poix enflamée ainsi que des fusées volantes pointées de fer, qui donnent plusieurs coups de suite dans le lieu où ils tombent."88 According to Clavigo. Timur was beaten in the first engagement through those 50 mailed elephants, but on the following day Timur took many camels and loaded them with dry grass placing them in front of the elephants. When the battle began, he caused the grass to be set on fire and when the elephants saw the burning straw upon the camels, they fied."59 When attacking Bhatnīr, Timur's troops were received in a similar manner for "the besieged east down in showers arrows and stones and fireworks upon the heads of the assailants."*

According to Ferishta, Hulaku Khan, the founder of the Mogol Empire in Western Asia, sent in 1258 an ambassador to the King of Delhi, and when the ambassador was approaching he was received by the vezir of the king with a great retinue, and among the splendid sights were 3,000 fire cars. About the same time we are informed that in the wars between the Chinese and the Mogol invaders a kind of fire-arms was used. It seems to have been like a rocket. It was called impetuous fire dart. "A nest of grains—case of chick peas—was introduced into a long tube of bamboo, which, on being ignited, darted forth a violent flame, and instantly the charge was projected with a noise like that of a pao, which

se See Histoire de Timur-beo, par Cherifeddin Ali d'Yesd, traduite par le feu M. Potits de la Croix. 1723, III, p. 94.

^{**} See Narrative of the Embassy of Ray Gonzalez de Clavijo to the Court of Timur at Samaroand. London, 1859, p. 163.
** See Malfonati-Timur in Sir M. Elliof's Histories of India, IU, 424.

was heard at about the distance of 150 paces."91 Deguignes says that the Mogols used in 1275 a similar weapon against the Chinese: "Les Chinois reprirent Tohangtcheou; et Tchangchi-kiai avec un grand nombre de barques qu'il avait ramassées, s'approcha pour combattre les Mogols. Mais At-chou avec des flèches enflammées, y fit mettre le feu, et les troupes Chinoises, après une vive résistance, se précipitèrent dans le fleuve." 92 At another place Deguignes under the year 917 says that the Kitans 23 carried with them a combustible which they had received from the King of Ou, and that this fluid burnt even under water.34 Arabian reports inform us that the Arabs used in India Atjeh-bazī, like those employed by the Greeks and Persians. Ferishta tells us that in the battle which Mahmud of Ghazna fought near Peshawar with Ānandapāl in 1,008 cannon (top) and muskets (tufang) were used by Mahmud. 85 Colonel Tod says in his Annals of Rajasthan: "We have, in the poems of the Hindu poet Chand, frequent indistinct notices of fire-arms, especially the nalgola, or tube ball; but whether discharged by percussion or the expansive force of gunpowder is dubious. The poet

[&]quot;See On the early use of Gunpowder in India; in "The History of India" the posthumous papers of the late Sir H. M. Elliot, x.c.n., edited by Professor John Dawson, vol. VI., p. 460. Ibidem in note 2 is a quotation from Père Gaubil's "Historie de Gentchiscan," p. 69. Les Mangous se servirent alors de pos (ou canons) à feu. On avait dans la ville des pas à feu. . . Je n'ai pas ceé traduire par esnos, les charactères pos, et le pas, un de ces caractères a à côté le charactère ché, pierre, et c'était une machine à lancer des pierres. L'autre charactère et joint au charactère ho, feu, et je ne sais pas bien si c'était un canon comme les nôtres. De même, je n'oserais assurer que les boulets dont il est parlé se jetaient comme on fait aujourd'hui.

⁹³ See "Histoire générale des Huns, par M. Deguignes, III, 162.

³³ On the Khitans see my book "Der Presbyter Johannes in Sage und Geschichte," pp. 121-126.

^{*} See Deguignes, II, p. 61: "Ils (les Khitans) apportoient avoc oux une matière inflammable, dont le Boi de Ou leur avoit donné la connoissance, c'était une matière grasse qui s'enflammoit et qui brûloit au milieu des eaux.

^{**} See The History of India, edited from Sir H. M. Elliot's papers by Prof. John Dowson, VI, 219 and 454.

also repeatedly speaks of "the volcano of the field," giving to understand great guns; but these may be interpolations, though I would not check a full investigation of so curious a subject by raising a doubt." "Muhammed Kasim used such a machine or manjanik when besieging in A.H. 93 (A.D. 711-12) the port of Daibal. The first thing done with this machine was to shoot down from the top of the high pagoda a long pole surmounted with a red cloth." The prophet Muhammed is also credited with having used the manjanik when besieging Taif in the ninth year of the Hegira, and according to Ibn Kotaibah the projectile weapon in question was already used by Jazynah, the second King of Hyrah, whose date is fixed about the year 200 A.D. "

Passing over the statements of Dio Cassius and Johannes Antiochenus, that the Roman Emperor Caligula had machines from which stones were thrown among thunder and lightning, we come to the statement of Flavius Philostratos, who lived at the court of the Emperors Septimius Severus, and Caracalla. In his history of Apollonics of Tyans, he mentions, that when that extraordinary man was travelling in India, he had among other things learnt the real reason why Alexander the Great desisted from attacking the Oxydracae. "These truly wise men dwell between the rivers Hyphasis and Ganges; their country Alexander never entered, deterred not by fear of the inhabitants, but, as I suppose, by religious motives, for had he passed the Hyphasis, he might, doubtless. have made himself master of all the country round them ; but their cities he never could have taken, though he had led a thousand as brave as Achilles, or three thousand such as Ajax, to the assault; for they come not out to the field to fight those who attack them, but these holy men, beloved by the gods, overthrew their enemies with tempests and thunderbolts shot from their walls. It is said that the Egyptian

^{**} See Annals of Rajasthan, I, 310.

** See Elliot's Posthumous Papers, VI, 462.

** Ibides, p. 461.

Hercules and Bacchus, when they overran India, invaded this country also, and having prepared warlike engines, attempted to conquer them; they in the meanwhile made no show of resistance, appearing perfectly quiet and secure, but upon the enemy's near approach they were repulsed with storms of lightning and thunderbolts hurled upon them from above." In the apocryphal letter which Alexander is said to have written to Aristotle, he describes the frightful dangers to which his army were exposed in India, when the enemies hurled upon them flaming thunderbolts.⁹⁰

Firdusi ascribed to Alexander this expedient when opposed by Porus. While Sikander, according to the author of the Shah-Nama, was marching against Porus (Fur) his troops became so frightened when they perceived the numbers of elephants which Porus was sending against them that Alexander consulted his ministers how to counteract this foe. Their advice was to manufacture an iron man and an iron horse, place the former on the latter, fix the horse on wheels, fill them both with naphtha and propel them towards the elephants, where they would explode with great havoc.

Such a stratagem is ascribed by the Franciscan monk Johannes de Plano Carpini to Prester John when he was fighting against the Tatars. In my monograph on Prester John I have pointed out to what special event it may probably refer. 100

^{**} See Philostrator Τὰ els τὰν Τοινέα ᾿Απολλάνιον. Tho words used by Philostratos are βρονταί κάτω στρεφόμεναι (II, 14), and ἐμβροντηθέντας αὐτοὺς ὑτὸ τῶν σορῶν (III, 3).—Compare Projectile Weapons of War, pp. 83 and 84.

¹⁰⁰ See Der Presbyter Johannes in Sage und Geschichte, pp. 93 and 94.

"Johannes Presbyter venit contra cos (Tataros) exercitu congregato, ot
faciens insagines heminum cupreas in sellis posuit supra eques, ponens ignem
interius, et posuit komines cum folilibus post imagines cupreas supra eques;
et cum multis imaginibus et equis talliter praeparatis vonerunt contra
praedicto Tartaros ad pugnam; et cum ad locum precili porvenissent,
istos eques unum juxta alium praemiserunt, viri autem qui erant retro,
posuerunt nescio quid ignem qui erat in praedictis imaginibus et cum folilibus
fortiter suffaverunt; unde factum est quod ex igne graeco homnines comburebantur et oqui, et ex fomo ser est denigratus."

We read in the extracts remaining from the work of Ktesias 101 on India, that an oil was prepared from a big worm, which lived in the deep bed of the river Indus. This animal had two big tusks (jaws? branchia), slept during the day in the muddy sands of the banks of the rivers, which it left at night in search of food, seizing big animals, which it devoured. According to C. Plinius Secundus this worm catches even elephants.102 When such an animal has been caught-which is generally done by binding a sheep or a goat to a strong pole-it is kept suspended in the sun for thirty days, that the oil may drip from it, and this oil was collected in earthen pots. Each worm supplied a quantity equal to ten measures of oil. This was sent to the king in sealed jars. The oil had the power to ignite every thing and was for this reason used especially at sieges. Jars filled with this material were thrown into besieged towns and whatever they touched ignited as soon as they broke. Nothing but rubbish and sweepings could extinguish the flame, when once ignited. Neither man, nor animal, nor anything could

¹⁰¹ See Photii Myriobiblon, 1653, p. 153-156.

[&]quot;Οτι ἐν τῷ ποταμῷ τῶν 'ἐνδῶν σκῶλης γίνεται, τὸ μὲν είδος εἰδν περ ἐν ταῖς συκαῖς εἰωθε γίνεσθαι, τὸ δὲ μῆκος, πήχων ἐπτὰ τοὐς μείζους ἐλ καὶ ἐλάττους. τὸ ἐν πάχος δεκαστέα παίδα μόλις φασὶ ταῖς χεροὶ περιβαλεῖν. ἔχουσ: ἐλ ἐδέντας δόο, ἐνα ἀνω καὶ ἐνα κάτων καὶ ἐγι ὰν λάβων: τοῖς ἐδοῦν, και ετθευστι. καὶ τὴν μὲν ἡμέραν ἐν τῆ ἱλόῖ τοῦ ποταμοῦ διαιτῶνται; τῆ δὲ νωπὶ ἐξέρχου. καὶ τούτων δε ὰν εὐτύχη ττιὰ ἐν τῆ γῆ, βοὶ ἡ καμήλφ, καὶ ὁἀις συλλαβων ἱλκει εἰς τὸ πο ποταμὸν, καὶ πάντα κατεσθείε πλὴν τὸς κοιλίαι. ὀγρωές ἐλ ἐγλείττρω μεγάλω, ἔριφον ἡ ἄρνα ἀνδησάντων τῷ ἀγκίστρω, καὶ ἀλόσεται σιδηραῖς ἐναμμεστάντων. ἀγρωόσωντει ἐλ τριάκοντα ἡμέραι κραμῶστιν αὐτον. καὶ ἀγγεῖα ὑποτιδέασι. καὶ ρεῖ ἐξ αὐτοῦ, ὅτων δέκα κοτόλαις ἀττικὰς τὸ πλήθος. ὅταν ἐλ παρελέλθωσιν αὶ τριάκοντα ἡμέραι, ἀποβήθητουτ: ἀνο σκάληκα. καὶ τὸ ἱλαιον ἀσφαλισάμενα, ἡγουσι τῷ βασιλεῖ μόνω τῶν 'ἐνδιν. ὁλλφ ὁ ἐν κτετιν ἐξ αὐτοῦ ἔχειν. τοῦτο τὸ ὑλιον, ἐψ ὁ ὰν ἐνιχνθή, ἀνάπτει καὶ καταβλέγει ξόλα καὶ ζῶι. καὶ ἐλλιας οὐ σθέννετι εἰ μὰ τηλῷ σολλῦ τε καὶ παγείν: καὶ καταβλέγει ξόλα καὶ ζῶι. καὶ ἐλλιας οὐ σθέννετι εἰ μὰ τηλῷ σολλῦ τε καὶ παγεί:

¹⁰¹ See Caii Plinii Secundi Historia Naturalis, Libr. IX, 17: "In sodem (Gange flumine) esse Statius Sebosus haud medico miraculo affert, vormes branchiis binis, sex cubitorum, oscrulcos, qui nomen a facie traxerunt. His tantas esse vires, ut elophantos ad potum venientes, mordicus comprehensa manu corum abstrahant." Just previously Plinius had spoken of the Delphinus Gangeticus (platanista).

withstand this terrific combustible. Philostratos confirmed these statements. According to him this worm-like insect lives in the Hyphasis, and the flame caused by the fire can only be subdued by being entirely covered with dust. The king is the sole owner of all these animals. Ktesias, Aelianos, and Philostratos, all three agree in the name of this worm, which they call Skolex (σκώληξ). Lassen scorns the possibility of such a worm being in existence, and ascribes the whole description to the imaginative tendency so prevailing in the mind of Oriental nations. The late Professor H. H. Wilson takes a more practical view of the case, by identifying the worm in question with the Indian alligator, and remembering that the oil and the skin of the alligator were considered in ancient times to possess most wonderful qualities, and that the greater part of the other description tallies with the outward appearance and natural habits of the alligator. Wilson seems to have fixed on the right animal. 103 Nevertheless so far as the name σκώληξ is concerned nobody so far as I know has tried to explain it. An animal of seven cubits in length, and of a breadth in proportion to its size, could hardly have been called a worm, unless the original name of the beast in question resembled the Greek word Skolez. The word represented by the Greek word Skolex is no doubt the Sanskrit term culuki, cullaki (with the variations ulupin or culumpin). Culukin is derived from culuka, mire, it is therefore an animal which likes to lie or to live in mud. The cullakî is described in Sanskrit works as somewhat similar to the Siéumāra, which is identified with the Delphinus Gange-

¹⁰⁰ See Indische Alterthumskunde von Christian Lassen, II, pp. 641 and 642. "Unter diesen Erzeugnissen der überschwünglichen Einhildungskraft der Inder möge hier noch besonders gedacht werden, des aus im Indus lebenden Würmern gewonnenen Oeles, welches die Eigenschaft besessen haben soll, alles anzuzinden und zu der Ansicht verleitet hat, das die alten Inder Feuerwaffen gekannt hätten. Diese Nachricht muss im Gegentheil gebraucht werden, um zu beweisen, dass schon zur Zeit des Ktesias dichterfache Vorstellungen, welche den Indern eigenthimlich sind, den Persern bekannt geworden waren." Compare also Elliet's History of India, VI, pp. 478-80.

ticus, though its name denotes a childkiller. The cullaki is therefore a large aquatic animal, which because it lives principally in water, is called a fish; and as the crocodile prefers as its place of abode the muddy banks of a river, the name cullaki applies most appropriately to it.¹⁰⁴

It is a peculiar coincidence that in Telugu an iguana is called udumu, and the lizard is generally called udumupille or young iguana; the Tamil name of the same animal is udumbu.

The identity is thus clearly established between the Greek word skolez (as the Greeks had no nearer sound than sk to resemble the palatal c), the Sanskrit words culiuki (cullaki, culumpi, and ulupi), and the Dravidian ugumbu and ugumu.

On the west coast of India oil is even now obtained from big fish by letting their carcasses lie in the sun and allowing the oil thus to coze out, which process creates all the while an unbearable stench. With respect to the quantity of oil gained out of a fish like a porpoise and of s crocodile, the superiority rests doubtless with the former, though a well-fed and plump gavial possesses no doubt likewise a considerable amount of oily substance. 103

The iguana resembles in its shape a crocodile, and both being named in the Dravidian languages and in Sanskrit by the word culumpi alias udumbu, this term applies in the former languages to the smaller and in Sanskrit to the larger animal. The Sanskrit word musali and the Tamil mudalsi are also identical in origin, but they differ in so far that musali

¹⁶⁴ The author of the Sabdaratnavali explains it by Sisemardkriimateya, i.e., a fish which resembles the porpoise; and in Hemacandra's Anekarthasangraha we read cullakt kungikt bhede titumëre kulëntare; Vitvaprakata and Modinikara have nearly the same explanation: Culvat (cullat) titumërepi kungibhede kalëntare, i.e., culukt is a pot; a porpoise (and) a kind of raçe.

¹⁰⁵ The cil of the crocodile is mentioned in Indian Medical Works, and it is in the list of Dr. Forbes Watson included among the commercial products of India.

denotes a house lizard and mudalai a crocodile. In fact the Sanskrit musali and culumpin (culuki) correspond according to their meaning to the Tamil udumbu and mudalai. The inference to be drawn from this fact is obvious.

The culukin is in Sanskrit only a large sized animal; a worm, especially an earth-worm, is called a kiñculuka or kiñculuka or kiñculuka, i.e., a little culuka.

No doubt the description of Ktesias is in many respects inaccurate, but I hope to have been able to trace the thread of truth which runs through it.

As oil, especially boiling oil, is used in Indian warfare, the subject is of particular interest in this inquiry.

CHAPTER IV.

INDIA THE HOME OF GUNPOWDER AND FIREARMS.

In every inquiry which is conducted with the object of proving that a certain invention has been made in any particular country it is of the utmost importance to show that so far as the necessary constituents of the object invented are concerned, all these could be found in the country credited with such invention.

The ordinary components of gunpowder are saltpetre, sulphur, and charcoal.

It is now generally admitted that the nitrum which
occurs in the writings of the ancients was not saltpetre, but
natron, i.e., sodium carbonate; the latter word is nowhere
extant in Greek or Roman literature, though the words nitrum
and natron are no doubt in their origin identical.

The word neter occurs twice in the Bible. It is described as an alkali, which was used as soap: "For though thou wash thee with nitre, and take thee much sope, yet thine iniquity is marked before me, saith the Lord God" (Jerem. ii. 22); and "As he that taketh away a garment in cold weather, and as vinegar upon nitre, so is he that singeth songs to an heavy heart." (Proverbs. xv. 22.)

Herodotos mentions nitrum as litron $(\lambda i \tau \rho \rho \nu)$ in his description of the embalming of dead bodies as practised in Egypt. Pliny repeatedly speaks of nitrum, and Galen 107 records that it was burnt to strengthen its qualities. This would have had no effect if applied to salpetre. There is no doubt that had the ancients known saltpetre, its oxydizing properties would soon have been discovered by them, which is the most important step towards the invention of gunpowder.

The word natron was introduced into Europe from the East by some European scholars who had been travelling there about the middle of the sixteenth century and who had thus become acquainted with this salt; 108 and though the word natron was originally used there for denoting saltpetre, its other form nitrum has been since assigned it; however, as we have seen, the nitrum of the ancients is quite different from our nitre, which is saltpetre (potassium nitrate).

Native saltpetre, i.e., saltpetre produced by entirely natural processes is very scarce, so much so that the inventor of nickel, Freiherr Axel Friedrich von Cronstedt (1722-65) was unacquainted with it. It is found especially in India, Egypt, and in some parts of America. Since the introduction of gunpowder in European warfare saltpetre has been manufactured wherever native saltpetre could not be obtained in sufficient quantities. It was obtained, from the efflorescence on walls (sal murale) and other sources, this exudation,

¹⁰⁶ Herodotos, II. 86, ταύτα δὲ ποιήσαντες ταριχεύνυσι λίτρφ, and 87, τὰς δε σάρκας τὸ λίτρον κατατήκει.

ist Nitrum ustum proprius ad aphronitrum accedit, utpoto ex ustione tenuius redditum (λευτομερέστερον). Ceterum nitro usto simul et non usto in talibus morbis uti consuerimus (νέτρε δε εκειαμένε τε κοὶ δικαύτε καὶ ἡμεῖς ἐπὶ τοιούτων χράμεθα. Galenus, De Simplie. Med. Pacult. IX. Dioscurides says also that nitrum was commonly burnt. Compare Beckmann's History of Inventions, II. 433.

¹⁰⁶ See J. Beckmann, History of Discoveries, under the head Saltpetre, Gunpowder, Aquafortis.

together with all the other artificial modes of producing saltpetre, became a perquisite of the sovereign, and this saltpetre regale grew in time into as obnoxious a burden to the people as the hunting regale. The saltpetre regale is first mentioned, as having been exercised in 1419 by Günther, Archbishop of Magdeburg.¹⁰⁹

The little knowledge possessed by the ancients of chemical science, their utter ignorance of chemical analysis, accounts for their not improving, or rather for their not being able to improve the materials at their disposal and discovering the natural qualities of the different alkalis in their possession.

Throughout India saltpetre is found, and the Hindus are well acquainted with all its properties; it is even commonly prescribed as a medicine. India was famous for the exportation of saltpetre, and is still so. The Dutch, when in India traded especially in this article.

In Bengal it is gathered in large masses wherever it effloresces on the soil, more particularly after the rainy season. In the Sukraniti saltpetre is called sucarcilavana, well shining salt. The Dhanvantarinighantu describes saltpetre as a tonic, as a sonehal salt; it is also called tilakam (black), krynalavanam and kālalavanam. It is light, shiny, very hot in digestion and soid. It is good for indigestion, acute stomach ache, and constipation. It is a common medical prescription. 110

2. Sulphur, the second ingredient of gunpowder, is also found in India, especially in Scinde; it is, and was, largely

¹⁰⁰ See J. Beckmann, History of Discoveries, under the head Saltpetre, Gunpowder Aquafortis.

³¹⁰ See Dhanvantarinighantu, in the Description of Salts. Suvarcalavanaproktam ruoyakam hrdyagandhakam tilakam kṛṣṇalavanam tat kalalavanam smṛtam. Laghu sauvarcalam pake vṛṛyoṣṇam vɨsadam kaṭu gulmatólavibandhaghnam hṛdyam surabhilocanam.

Amarakopa, IX, 43. Sauvarcale'kparucake tilakam tatra mecake, and 110 sauvarcalam syst rucakam.

imported into India from the East. It is well known and received its name from its smell, being called gandha or gandhaka, smell, or in this case as it has not a good smell, rather from its stench. Its quality differs with its color, according as it is white, red, yellow, or bluish. Though sulphur is a very important part of gunpowder, gunpowder is in some parts of India even prepared without it. Sulphur was always in great demand in India, and in medicine it is often made use of.¹¹¹

3. Charcoal is the third component part of gunpowder. Its constitution varies necessarily with the plants which in the different countries are used in its manufacture. In Prussis the coal of the alder, limetree, poplar, elder, willow, hemp, and hazel is used for powder. The charcoal of willow trees is especially esteemed on account of its excellent qualities. In the Sukraniti the arka (Calatropis gigantea), the snuhi, snuhi or snuh (Euphorbia neriifolia), and the Rasona (Allium satioum) are given as the plants whose charcoal is best fitted for gunpowder.

The arka, gigantic swallow wort, is a common bush growing in great quantities all over the country. It has a very good fibre, and is regarded by the natives as possessing most powerful and useful qualities. If the arka is used with discretion when iron is being forged, it contributes greatly to the excellence of the Indian steel. It is applied against epilepsy, paralysis, dropsy, &c. Its milky juice is smeared on wounds. It is a common sight in India to see suffering people applying it. The root is also used against syphilis. Its charooal is very light and much used for pyrotechnical

See Sadvaidyajtvana.

¹¹¹ Śweto raktaśca pitaśca nilasceti caturvidnah gandhako varoato jūsyo bhinnabhinnagunāsrayah; Rajanigāsapiu. It is cleaned by being boiled with castor oil or goat's milk. Gandhakam palamatram cā lohapatrantare ksipet erandataliam sampūrya pacet suddhirbaviyati. Athava chagadugdhena pacitam suddhirm apnuyat.

preparations, and its qualities in this respect are so well known that every school boy is acquainted with them and prepares his own powder and mixture with this plant. Its name in Tamil is erukku, in Malayalam eruka, in Telugu jillēdu, in Bengali akund, and in Hindustani mudar or ark.

b. The snuhī, snuh, (triangular spurge, kalki in Malayālam, pāśāň kalki in Tamil, bontajamnudu in Telugu, narashy, seyard in Hindustani and narsy in Bengali) grows like the arka in waste places all over the Indian Peninsula. The qualities of this plant for pyrotechnic displays are as well known as those of the Calatropis gigantea. Dried sticks of this plant are scarce. It is also widely used as a medicinal plant, externally against rheumatism, and internally as a purgative; it is given to children against worms.¹¹²

c. The rasona is a kind of garlie; the Marathi equivalent is lasuna. Its botanical name is Allium sativum.

The prescription for making gunpowder is, according to the Sukraniti, as follows: mix 5 parts of saltpetre with 1 part of sulphur and 1 part of charcoal. The charcoal is to be prepared from the arka, snuhi, and other similar plants in such a manner that during the process the plants are so covered that the smoke cannot escape. The charcoal thus obtained must be cleaned, reduced to powder, and the powder of the different charcoals is then to be mixed. After this has been done, the juice of the arka, snuhi, and rasona must be poured over the powder which is to be thoroughly mixed with this juice. This mixture is to be exposed and dried in the sun. It is then finally ground like sugar and the whole mixture thus obtained is gunpowder. 113

¹¹³ With respect to the sanhi there exists a Tamil proverb, reflecting on its leafless state and big growth. It runs as follows: "There is no leaf to contain a mustard seed; but there is shade to shelter an elephant." (αΘεσις τ... ⑤ Βαυβοίδω; ευτάσερεια ων (μρώτο).—Compare also: The Useful Plants of India, by Major Heber Drury, 1858, p. 100-102.

The proportion of saltpetre varies, as some take 4 or 6 parts instead of 5, but the quantities of sulphur and charcoal remain unaltered. These two are the usual receipts. Nevertheless the mixture is often changed when the gunpowder is to be of a particular color or if it has to serve a special purpose. The three principal ingredients are mixed in different proportion, and realgar, opiment, graphite, vermilion, the powder of magnetic iron oxide, camphor, lac, indigo, and pine-gum are added to the compound according as they are required. 115

It seems peculiar that powder should not have been mentioned in Sanskrit works, but this is not an isolated instance of the silence observed in them on matters of historical importance. It is most probable that the very common occurrence of gunpowder interfered with its being regarded as something extraordinary and worth mentioning. The actual mode of preparing the different sorts of gunpowder may on the other hand have been kept a secret in certain classes, and such a state of affairs coincides with the Indian system of caste. Explosive powder either used for rejoicings as fireworks or for discharging projectiles was known in India from the earliest period, and its preparation was never forgotten; but as India occupied in ancient times such an isolated position, it is not singular that the knowledge of this compound did not earlier extend to other countries. However wonderful the composition and however startling the detonating effect of powder may be to the uninitisted outsider, to those who have been familiar with them from their earliest youth all seems natural and intelligible. India is the land of fireworks; no festival is complete without them, and as the materials for their manufacture are all indigenous, and of easy access, there is no difficulty in gratifying such desires.

¹³⁴ See Chapter V, al. 143.

¹¹³ See Chapter V, 6l. 146-148.

In an extract taken from the Mujmalut Tawārīkh—which was translated in 1126 from the Arabic, into which language it had been translated a century previously from a Sanskrit original—we read: "that the Brahmans counselled Hal to have an elephant made of clay and to place it in the van of his army, and that when the army of the king of Kashmir drew nigh, the elephant exploded, and the flames destroyed a great portion of the invading force. Here we have not only the simple act of explosion, but something very much like a fuze, to enable the explosion to occur at a particular time." 116

Vaisampāyana mentions among the things to be used against enemies *moke-ball*, which contained most likely gunpowder, and which were according to the explanation proposed by his commentator made of gunpowder.

The following stanza, which is taken from the Rajalaks-minarayanahrdaya, a part of the Atharvanarahasya, is no doubt a clear proof of the fact that the Hindus were familiar with gunpowder at a very remote period: "As the fire prepared by the combination of charcoal, sulphur, and other material depends upon the skill of its maker so also may thou, O! representative of knowledge (Laksmi), by the application of my faith manifest thyself quickly according to my wish."115

The Sanskrit word for gunpowder is agnicūrņa, firepowder, which is occasionally shortened into cūrņa. The Dravidian languages have all one and the same word for medicine and gunpowder; in Tamil marundu, in Telugu mandu, in Kanarese maddu, and in Malayalam maruna.

¹¹⁶ Sw the History of India of the late Sir H. M. Elliet, VI, 475; I, 107.
¹¹⁷ Sw note 60.

¹¹⁸ Ses Rajalakşminarayanahıdaya: Ingalagandhadipadarthayogat karturmanlığınuguna yathagnih caitanyarüpe mana bhaktiyogat kankşanurüpam bhaja rüpam ağu.

Occasionally the word gun (tupdki) is prefixed to remove any doubt as to what powder is meant. In Malayalam, the word redi, which means explosion, is prefixed. The Chinese crackers are called by the Tamulians Simi redi—Chinese crackers—to distinguish them from the Indian crackers. The word marundu is most probably derived from the Sanskrit past participle mardita, pounded, in the sense of different ingredients being pounded together, as a medicine powder. The meaning of gunpowder is then in a special sense derived from this general expression. The Dravidian equivalent of curpa is Sunnāmbu in Tamil, Sunnamu in Telugu, chalk.

From the subject of gunpowder we now turn to the weapon, to which it is applied, i.e., to the firearms.

Two kinds of firearms are described in the Sukranīti, one is of small size and the other is of large size. The former is five spans long, 118 has at the breech a perpendicular and horizontal hole, and sights at the breech and muzzle end of the tube. Powder is placed in the vent, near which is a stone, which ignites the powder by being struck. Many dispense with this flint. The breech is well wooded and a ramrod compresses the powder and ball before the discharge. This small musket is carried by foot-soldiers.

A big gun has no wood at its breech; moves on a wedge in order to be directed towards the object to be shot at, and it is drawn on cars.

The distance which the shot travels depends upon the strength of the material from which the gun is made, upon the circumference of the hole, and the gun's compactness and size. The ball is either of iron or lead or of any other material. Some big balls have smaller ones inside. The gun itself is generally of iron, occasionally also, as we

¹¹⁹ A spam (vitasti) is the distance between the extended thumb and the little finger.

have seen in the Nitiprakāsikā, of stone. The gun is to be kept clean and must be always covered.¹²⁰

The term used for gun nālika (nalika, nālīka) is derived from the word nāla (nala), a reed, a hollow tube, which is another form for its synonyms nada, nādī, or nādī; in the same way nālika corresponds to nādika. Considering that the guns were in ancient times made out of bamboo, and that some bamboo guns are still used in Burmah, the name appears both appropriate and original. That the idea of bamboo being the original material for guns was still in the mind of the author of the Sukranīti seems to be indicated by his calling the outside of the stock of a gun bark (tvak.)¹²¹

The gun is very seldom mentioned in Sanskrit writings, and even where it has been mentioned the meaning of those passages has been generally misunderstood. In all European Sanskrit dictionaries the word nālika or nālika has been rendered as stalk, tube; arrow, dart, &c., but the third signification gun is not given; though it is one which is known to every learned Paudit. At the outset every body can easily see that the meaning of arrow and of gun can be rightly applied to a reed; the arrow is a reed which is discharged as a missile, and a gun is a reed out of which missiles are shot.

In the slokas 21 and 24 of our extract of the Sukranīti we read that a king should keep on a big war chariot two large guns, and in 61. 31 we are further informed that his beautiful iron chariot should be furnished with a couch, a swing, and among other things also with sundry arms and projectile weapons. This tallies with an account concerning the fortifications of Manipura, as described in Mr. J. Talboys Wheeler's "History of India:" On the outside of the city were a number of wagons bound together with chains, and in them

111 See Sukraniti, Chapter V, al. 139.

¹²⁰ See Sukrantti, Chapter V, 6l. 135-39 and 149-151.

were placed fireworks and fire weapons, and men were always stationed there to keep guard." This statement is very important, and if substantiated would be of the greatest weight in this inquiry; but none of the Sanskrit Manuscripts of the Mahabhārata which I have searched contains this Śloka. However the above mentioned statement appears to rest on good authority, as the Śukranīti declares, that the wall of a fortress "is always guarded by sentinels, is provided with guns and other projectile weapons, and has many strong bastions with proper loop-holes and ditches." 122

In the second stavaka of the Bhāratacampā composed by Anantabhaṭṭa, some three hundred years ago, we find the following simile: "The fierce warrior who killed his enemy with heaps of leaden balls, which emerge quickly from the gun lighted by a wick, is like the rainy season which killed the summer with hailstones which descend quickly from the rows of black clouds lighted by lightning." 123

While the verse just quoted from the Bharatacampu reveals an intimate knowledge of firearms, yet its apparent recentness may be alleged as an objection against its being produced as an authority for the existence of firearms in India at an early period. To obviate such further objections a sloka will now be given from an undoubted early poem, the Naisadha which describes the adventures of Nala and is generally ascribed to one Sriharsa, a Brahman, who must not be confounded with Śriharsa, the king of Kasmīra. Its date goes back to the twelfth century, i.e., before the introduction of firearms into Europe. The verses in question run as follows: "The two bows of Rati and Manmatha are

¹²³ See The History of India, Vol. I, pp. 405 & 422; and read Appendix.— Compare also Sukraniti I, 238 and 255.

Yamikai raksito nityam nalikastraisca samyutah.
 Subahudrdhagulmasca sugavaksapranalikah.

¹²³ See Kalambudalinalikat kaanadiptivarttyam sandhukritat sapadi sadhvaninisaradbhih; varqafmatasqulikanikarah kathorah gbarmabhiyatim avadhit ghanakalayodhah.

certainly like her (Damayanti's) two brows, which are made for the conquest of the world, the two guns of those two (Rati and Manmatha) who wish to throw balls on you, are like her (Damayanti's) two elevated nostrils." ¹²⁴ To leave no doubt that guns are meant here, the learned commentator Mallinatha explains nalika as the Dronicapa, the projectile weapon from which the Dronicapasara, a dart or a ball is discharged, an expression, we have already noticed in Vaisampayana's Nitiprakasika. ¹²⁵

On the other hand it is doubtful whether the asani missile, which was given by Indra to Arjuna and which made when discharged a noise like a thunder-cloud, alludes to firearms, as ton Bohlen explains it.¹²⁶

In the first book of the Sukraniti we find it stated that the royal watchmen, who are on duty about the palace, carry firearms. The Kamandakiya, acknowledged as one of the earliest works on Nitisastra, says that "Confidential agents keeping near the king should rouse him by stratagems, gunfiring and other means, when he is indulging in drinking bouts, among women, or in gambling." 127 It seems from this statement that the practice of firing guns as signals

¹³⁴ See Naisadha, II, 28.

Dhanusi ratipalicabanayorudite visvajayaya tadbhruvan nalike na taduccanasike tvayi nalikavimuktikamayoh.

Mallinatha explains the second line as follows: "Damayantyā uccanāsike unnatanasāpute tvayi nallikanām dropiedpašarūnām vimuktim kāmayate iti tathoktayostayostalakam abhikṣacarībhyo na iti na pratyayaḥ. Nalike dropiedps na kim iti kākūh pūrvavat utprekṣā.

¹⁵⁵ See p. 14.
156 See Das alte Indien, mit besonderer Rücksicht auf Aegypten. Von Dr. P. von Bohlen, II, p. 66; compare Mahabharata, Vanaparva, Indralokabhigamanaparva, I, 3, 4.

Evam sampūjito jispuruvāsa bhavane pituh upašiksan mahāstrāņi sa samhārāņi pāndavah.

Cakrasya hastat dayitam vajram astram ca dussaham asantéca mahanada meghavarhipalaksanah.

¹²⁷ See Kamandakiya, V, 51.

Panastridyütagoşthişu rajanam abhitascarah bodhayeyuh pramadyantam upayaimalikadibhih.

All the MSS. I have consulted give nalika, and so do also the prints in Teluguand Grantha characters. The Calcutta edition has require which as

was in vogue among the ancient Hindus, if we can trust the evidence of one of the oldest Sanskrit writings.

In the preface to a Code of Gentoo Laws, or Ordinances of the Pundits, occurs the following passage: "It will no doubt strike the reader with wonder to find a prohibition of firearms in records of such unfathomable antiquity; and he will probably from hence renew the suspicion which has long been deemed absurd, that Alexander the Great did absolutely meet with some weapons of that kind in India as a passage in Quintus Curtius seems to ascertain. Gunpowder has been known in China, as well as in Hindustan, far beyond all periods of investigation. The word firearms is literally Sanskrit Agnee-aster, a weapon of fire; they describe the first species of it to have been a kind of dart or arrow tipt with fire and discharged upon the enemy from a bamboo. Among several extraordinary properties of this weapon, one was, that after it had taken its flight, it divided into several separate darts or streams of flame, each of which took effect, and which, when once kindled, could not be extinguished; but this kind of agneeaster is now lost. Cannon in the Sanskrit idiom is called Shet-Agnee, or the weapon that kills a hundred men at once, from (Shete) a hundred, and (gheneh) to kill; and the Pooran Shasters, or Histories, ascribe the invention of these destructive engines to Beeshookerma, the artist who is related to have forged all the weapons for the war which was maintained in the Suttee Jogue between Dewta and Ossoor

I explained on page 232 as d and l are often interchanged, dalayerabhedah, is another form for naliks, if not so it must be regarded as an altogether false reading. The word natika (given in Böthlingk and Roth's Sanskrit Wörterbuch as nadits) occurs nowhere else, and the only reference to it in the just now mentioned Sanskrit dictionary is this passage from the Kamandakiya, and there even the meaning of the word is not positively stated, but it is merely suggested that it may be a gong (wohl., eine metallene Platte, an der die Stunden angeschlagen worden).

(or the good and bad spirits) for the space of one hundred years." 128

And again we read in page 53 of the same work: "The Magistrate shall not make war with any deceitful machine, or with poisoned weapons, or with cannon and guns, or any other kind of firearms; nor shall he slay in war a person born an eunuch, or any person who putting his hands together supplicates for quarter, nor any person who has no means of escape, nor any man who is sitting down, nor any person who says, 'I am become of your party,' nor any man who is asleep, nor any man who is naked, nor any person who is not employed in war, nor any person who is come to see the battle, nor any person who is fighting with another, nor any person whose weapons are broken, nor any person who is wounded, nor any person who is fearful of the fight, nor any person who runs away from the battle."

As these passages are so often quoted without their origin being stated, it may at once be remarked that the prescription about the use of arms and the treatment of persons is a free translation from the seventh book of the institutes of Manu, vv. 90-93.

The important question at issue is, does this passage in Manu refer to firearms or not? In our opinion it certainly alludes to them, but still others prefer to apply it strictly to darts blazing with fire. The original words in Manu are:

Na kütair syudhair hanyst yudhyamano rane ripün na karnibhir napi digdhair nagnijvalitatejanais.

"No one should strike in a combat his enemy with concealed weapons, nor with barbed arrows, nor with poisoned arrows, nor with darts kindled by fire." Kullukabhatta, the latest

¹²⁶ See A Code of Gentoo Laws, or Ordinances of the Pundits, from a Persian translation, made from the original, written in the Shanscrit Language (by Nathaniel Brassey Halhed), London 1770, pp. L11, LIII, and 53.

commentator of Manu, favors by his explanation the opinion of those who take this passage in the sense "as darts blazing with fire." But then the questions arise, whether Kullukabhatta, who lived about four hundred years ago, expresses the whole meaning of the sentence, or whether Manu, though mentioning only ignited arrows, does not rather allude to firearms in general? The translation found in Dr. Monier Williams' Sanskrit English Dictionary under agnificalitate-jana 'having a point hardened in fire' is quite beyond the mark.

The meaning of arrow (sara, bāṇa) is much wider than is generally supposed. It was, and became more so in time, the usual term for any missile, whether it had the shape of an arrow or not; in the same way as the word Dhans signified in course of time every missile or weapon, so that the Dhanurveda, the knowledge of the bow comprised the knowledge of all other arms.

For instance, the shot out of a gun is called a sara, as we have seen when describing the nālika, 150 but it may be a ball and not an arrow. A rocket is generally styled a bāṇa (compare the Hindi term bān, a rocket); and bāṇapaṭṭrai in Tamil, or bāṇapaṭra in Telugu denotes a gunpowder or firework factory.

Company of the widers

A comparison of the context of the Manavadharmasastra with those of the Sukranīti and the Nītiprakasika makes it clear that Manu alludes to firearms. The Sukranīti runs in our extract as follows:—

277. A king, bearing in mind the six principles of policy and the designs of his enemy and his own, should always kill his enemy by fair and unfair fighting.

130 See note 25, dropiedpassereripi, discharging the missile of the Dropi-

¹³⁹ See Kullükabhatta to Manu, VII, 90. Kutanyayudhani bahih kaşthadimayani antarguptamisitasastrani; etaih samare yudhyamanah satrum na hanyat; napi karuyakaraphalakairbanaih; napi vişaktaih, napyagnidiptaphalakaih.

278. When the king gladdens his soldiers on the march with a quarter extra pay, protects his body in the battle with a shield and armour;

279. has induced his soldiers to drink up to a state of intoxication, the strengthener of bravery, the soldier kills his enemy with a gun, swords, and other weapons.

280. A charioteer should be assailed by a lance, a person on a carriage or elephant by an arrow, an elephant by an elephant, a horse by a horse.

281. A carriage is to be opposed by a carriage, and a foot soldier also by a foot soldier, one person by another person, a weapon by a weapon, or a missile by a missile.

282. He should not kill a person who is alighted on the ground, nor one who is emasculated, nor one who has joined his hands as a supplicant, nor one who sits with dishevelled hair, nor one who says "I am thine."

Then follow beginning with 282 up to 284 the same exceptions as found in Manu, VII, 91—93, and specified in Halhed's Code.

The Sukranīti goes then on stating expressly:

286. These restrictions exist in fair but not in unfair fighting; to ensure the destruction of a powerful enemy there is no fighting equal to unfair fighting.

287. Unfair fighting was certainly observed by Rama, Kṛṣṇa, Indra, and other gods; Bali, Yavana, and Namuci were killed by unfair fighting.

We see thus that the Sukranīti is in direct opposition to the law code bearing Manu's name, and considering the estimation in which the latter was held, it can hardly be assumed that a member of the Brahmanic community—in which term I include all the three higher castes and the Sadras within its pale—could have dared to compose it after the text of the Manavadharmasastra had once been finally settled as it stands to this day.

The Nitiprakasika coincides entirely with Manu, VII, 89, and in the first half of the 90th sloka, but differs in the second half of the 90th and the first half of the 91st sloka, and then agrees again, but this difference in two lines is of the greatest importance for our subject. 121

Manu, VII.

89. Those rulers of the earth, who desirous of defeating each other, exert their utmost strength in battle without ever averting their faces, ascend after death directly to heaven.

90. No one should strike in a combat his enemy with concealed weapons, nor with barbed arrows, nor with poisoned arrows, nor with darts kindled by fire.

91. Nor should he kill a person who is alighted on the ground, nor one who is emasculated, nor one who has joined his hands as a supplicant, nor one who sits with dishevelled hair, nor one who says "I am thine."

Nītiprakāšikā, VII. 44. The same.

45. No one should strike in a combat his enemy with concealed weapons, nor with poisoned arrows, nor with machines kindled by fire (guns), nor also with various stratagems.

46. Nor should he kill a person who has climbed on a tree, nor one who is emasculated, nor one who has joined his hands as a supplicant, nor one who sits with dishevelled hair, nor one who says "I am thine."

¹³¹ See Manu, VII, 90, 91.
90. Na kutairayudhairhanyat

yudhyamano rape ripun, na karpibhir napi digahair nagnijvalitatejansih.

Na ca hanydt sthaldrüdham na kitbam na kṛtañjalim, na muktakeiam nasinam na tavasmiti yadinam.

Nitiprakāšikā, VII. 45, 46. 45. Na kūtairayudhairhanyat yudhyamāno raņe ripūn, digdhairagnyujivalairyantraistantraifeaira pythagvidhaih.

Na hanydi erkenm arūdham na klibam na krtaājalim, na muktakesam nāsinam na tavāsmiti vādinam.

The punishment of any one who contravenes these laws was that he should inherit all the sins of him whom he thus kills unlawfully, and his victim would become heir to all the virtues of his murderer. 132 If what is most probable the Sukranīti and Nītiprakāšikā are of about the same age as our recension of the Mānavadharmašāstra, the question as to firearms being known at that period can only be answered in the affirmative.

It appears that before the codification of the law in lawbooks, the rules and precepts regulating certain subjects seem to have been generally known among the people and even assumed already the form of verse. Otherwise it can hardly be explained that the very same slokas are found in different authors, unless one is prepared to state that one must have copied them from another. But for such a supposition there exists no proof. It is rather more likely that they were common property and then embodied in the respective codes. There is not the slightest doubt that the interdict of the Manayadharmasastra interfered a great deal with the popularity of firearms, and that though they continued to be used, they were less frequently or perhaps less openly employed. The Mahabharata too contains many precepts by which mean, deceitful, and cruel behaviour is forbidden in war, but in reality those laws were often broken. The behaviour of the Kauravas against the Pandavas, whom they tried to burn

¹³² As the Nitiprakasika differe somehow from the Manavadharmasastra and from the Sukraniti we give here the following verses.

Na prasuptam na prapatam na nagnam na nirayudham na yudhyamanam pasyantam na parena samagatam.

Ayudhavyasanam praptam nartam natiparikatam na hinam na paravittam na ca valmikam aéritam.

Na mukho tṛṇinam hanyat na striyo veṣadhāriṇam etadṛśan bhatairvapi ghātayan kilbisi bhavet.

Hanyamanasya yat kiñcit duskrtam pūrvasabjitam tat sangrhya svasukrtam tebhyo dadyāt tathāvidhab.

With no mukhe truinem honyét (sl. 49) compare Mahabharata, Rajadharma, XCVIII, 48a : Trunparoamukhascaiva tavaamiti ca yo vacet.

and to destroy by every imaginable means, the murder of the sleeping young Pandavas perpetrated by the Brahman Asvatthama; these and many more similar acts prove that though the laws of humanity were acknowledged in abstracto they were not as in the present day followed in concreto.

Besides the interference of these moral rules with the extension of the use of such weapons, another and perhaps even more potent reason can be produced. Firearms were such powerful engines of war, that every one, who possessed them, kept their construction and handling as secret as possible. This is, in fact, the real reason, why so few books treat on this subject, and why such works are so jealously kept secret that it is most difficult to get hold of them.

The Mahabharata and Ramayana are full of the description of wonderful divine firearms, the Agneyastra. It may be that a solid substratum of fact underlies these descriptions, but they are so adorned with wonders that they outrun all reality. Perhaps the reason of these exaggerations was to conceal the real element of truth underlying them.

Aurva, the son of the sage Urva, or, according to the Mahābhārata, a son of Cyavana, was scarcely born when he threatened to burn the world by the flame proceeding from him. This flame was then removed into the sea, where it is known as the submarine fire (badavāgni). Aurva became later the guardian of the orphaned Sagara, whom he instructed in the Vedas and to whom he gave the fire weapon (āgneyāstra), by means of which Sagara regained the kingdom which his father Bāhu had lost. Agnivesa, the son of Agni, received, according to the Mahābhārata, the Āgneyāstra from Bharadvāja, and Agnivesa handed this weapon down to the son of Bharadvāja, Drona. This wonderful fire weapon plays an important part in the epic and dramatic literature, but it should not be overlooked that similar

wonderful weapons were ascribed also to other gods besides. e.a., to Brahma, to Vayu, to Varuna, &c., &c. 134

Considering that Sukra or Usanas is a member of the Bhargava family, it seems a striking coincidence that the agneyastra is through Aurva also connected with the same family.

It may look strange that while gunpowder and firearms appear to have been known in India since immemorial times. and though we know that fireworks and firearms were always in use-the Portuguese, the first Europeans who came to this country, were struck at their landing with the display of both 135 - so few actual traces of them should be found in this country. But while admitting to a certain extent the truth of this observation, we must also consider that only very few old buildings have been preserved in India from ancient times. that we have nothing which can vie in age with Grecian anticuities, omitting Egyptian and Assyrian antiquities altogether. Yet still we can prove the existence of firearms by carved images of them being preserved in some ancient stone temples.

1. In the Madura District lies not far north from Ramnad (Rāmanāthapura) on the sea the ancient Tirupallāni. It is

Agneyam astrum labdhva ca Bhargavat Sagaro ngpah jigaya prthivim hatva Talajanghan sahaihayan. Compare Mahabharata, Adiparva, CXXX, 39, 40.

39. Agnivesam mahabhagam Bharadvajah pratapayan pratyapādayat agneyam astram astravidām varab. 40. Agnestu jätassa munistato Bharatasattama

Bhāradvājam tad agneyam mahāstram pratyapādayat. See Sakuntala, III, 56, and Uttara Rama Caritra, VI.

133 Castanheda says in his description of Vasco da Gama's entrance into Calicut: " The procession again set out, preceded by many trumpets and sacbuta sounding all the way; and one of the Nayres carried a caliver, which he fired off at intervals." See Elliot's History of India, VI, 467; compare Kerr's Collection of Voyages, Vol II, 364. According to Sir A. Phayre, the king of Pegu, when advancing in 1404 up the Iravadi against the king Meng Khoung could neither land at nor attack Prome, as it was defended with cannon and muskets; see Journal, Asiatic Soc. Bengal, 1869, XXXVIII, D. 40.

¹³⁴ See Harivamsa, XIV, 33.

celebrated throughout India, on account of its famous temple dedicated to Adijagannātha, for pilgrims visit it from Benāres and other places in the north. The erection of this shrine goes back to a far distant period. On the outside of an ancient stone mandapa are seen the figures of some soldiers carrying in their hands small firearms. The dress of these sepoys is also peculiar, as the belts round their waists are provided with little bells. The soldiers have slippers on their feet and a peculiar cap on their heads.

- 2. In Kumbhaghona (Combaconum) is a temple devoted to Śarngapāṇi, i.e., to Viṣṇu bearing in his hands his bow Śarnga, It is one of the most ancient, largest, and most celebrated shrines in the Tanjore District. The height of the pageda amounts to about 180 feet, and the numbers of its stories to eleven. On the left side of the front gate of the fifth story from the top is a king sitting in a chariot drawn by horses surrounded by his troops. In front of the king stand two sepoys with small firearms in their hands which look like pistols. lower part of the pagoda is of solid stone, the higher ones and also the story just described partly of brick and partly of stone, i.e., the principal figures are all made of stone, but they are every ten years covered with a layer of chalk and bricks. The Sarngapani pagoda is said to be about 500 years old. Its sanctity and beauty is praised by seven Alvars, so that as it has not been rebuilt since that time, it must have been in existence when the sages lived. Tirupati is glorified by nine and Śrīrangam by ten Alvars.
- 3. In Kāñcipuram (Conjeveram) is a famous maṇḍapa, which, as it rests on a hundred columns, is called Satastambkamaṇḍapa, or Nūṭikālmaṇḍapa in Tamil. It was erected by Lakṣmīkumāratātācārya also called Koṭikanyādānatātācārya, as he was very rich and generous, and was said to have given a wedding present of 50 rupees to a krore (or ten millions) of girls. Being a Tātācārya he belonged to one of the highest

74 priestly families of the Vaisnavabrahmans, as the Tatacaryas trace their descent to Nadhamuni. He was the author of a work on Vedanta philosophy, and had at his own cost erected gopurams at Kañeīpuram, Tirupati, Śrīraṅgam, and Tirumāliraṁśolai. His eldest son was Tirumalatātācārya, who administered the Anaguṇḍi kingdom for a while after the death of Venkaṭapatirāya. When the Muhammedans occupied Kañeīpuram Tirumalatatācārya lost all his riches.

The mandapa is a square; 12 columns face the eastern and western sides, 8 columns face the northern and southern; besides these 96 columns 4 stand apart. On the 4th column of the north side, when coming from the west, is cut in solid stone, as the principal ornament of the column, a combat between soldiers. A trooper sits on horseback and a foot soldier aims with his firearm at his enemy. The mandapa was erected about 1624 (the year being tallaksmīdyeśakhābde).

- 4. In the precincts of the Tanjore temple are carved in stone on stone pillars opposite the "Scarga ekadasi-gate sepoys with small carbines in their hands.
- 5. In Pērūr, a few miles from Coimbatore, is a celebrated Śiva temple and near it is a fine shrine, known as the Sabhāmaṇḍapa. On the base of its broad stone pillars stands a soldier with a gun in his hands. The date of the erection cannot be ascertained with exactness, and even popular belief does not ascribe to this maṇḍapa more than a few hundred years. As is usual with buildings in the south of the Dekkan Tirumala Nayak is occasionally named as its builder.

All these buildings, which, as we have seen, contain representations of firearms, are, according to our notions of antiquity, not very ancient, as, the Tirupallani temple excepted, none of them is over 500 years old, but in judging the age of the subjects exhibited in the carvings of Indian temples, we should never lose sight of the fact that new subjects are not introduced in the architectural designs of the principal figures in any Indian ecclesiastical building. No architect, no one who erects a sacred pagoda at his own cost, will dare to represent in the chief carving of a conspicuous part of a building, as a big stone column is no doubt, a subject which is new and with which his countrymen were not familiar in times of yore, or which are not mentioned in the Silpasastra, or the works on arts. This is a custom which is well known to every learned Brahman, and which is observed even now. Occasionally one sees in temples and other buildings odd, nay, even very indecent groups; but these quaint figures, which are by the bye never central ones, fulfil a special object, namely, to catch the evil eye, and so to protect the structure from any mischievous consequences. Whenever a new private house is built, such a figure will be displayed somewhere in a conspicuous place, and is generally removed after it had been in its place for some time and thus fulfilled its object. I have been assured on good authority that the Marīcipatala, a very ancient work on architecture, contains a description of architectural designs relating to firearms, but though I have written for this work, I am afraid I shall get it too late to verify this statement. 136

Under these circumstances I cannot agree with the statement contained in Fergusson's excellent "History of Indian and Eastern Architecture" (p. 370), that "the date of the porch at Peroor is ascertained within narrow limits by the figure of a sepoy loading a musket being carved on the base of one of its pillars, and his costume and the shape of his arm are exactly those we find in contemporary pictures of the wars of Aurungzebe, or the early Mahrattas, in the beginning of the 18th century." I do not deny that the Sabhamandapa may be comparatively new, but the figure of the sepoy with a musket in his hand can in no way settle the age of the building. As to the remarks concerning the costume of the soldier, there is

¹³⁶ See Lists of Sanskrit Manuscripts in Private Libraries of Southern India, No. 5,610, lately published by me.

nothing to prove that his dress belongs to any certain period, and considering that the Hindu, if conservative in any thing, is especially so in his food and his dress, there is much probability that the uniform of the sepoy has also not been altered much in subsequent times. Moreover it must not be overlooked that the dress, especially the head-dress or turban varies according to caste and locality.

This remark leads me to refute an assertion made with some authority by Mr. W. F. Sinclair in the Indian Antiquary of September 1878. It is in a critical notice on a few slokas extracted, not quite correctly though, from the Sukraniti by Mr. Ram Das Sen. 137 In verse 136 we read : "The breech at the vent carries stone and powder and has a machinery which produces fire when striking." Alluding to this śloka Mr. Sinclair says : " From the evidence above given, it seems to me that if they (those verses) are not such interpolations the whole work must be a forgery of, at best, the 17th century, a period which I am led to select by the mention of the flint." Does Mr. Sinclair want to insinuate by this, that the Hindus did not know flints, nor their peculiar properties? It is hardly credible that a nation, which is so observant, should have overlooked objects of such common occurrence; or, if it knew them, that it should not have applied them to some use. Is it not perhaps judging others too much according to our own proficiencies, to intimate that, if Europeans did not apply flints or flintlocks to guns before the 17th century, no body else could have done so? There is scarcely anything so common, so well known in this country, as the qualities of the flint; in fact the Hindus are adepts in any thing connected with the art of making fire.

In the sixth book of the Nitiprakāsikā are enumerated all the articles which a king should take with him when setting out for a military expedition. After mentioning all sorts of provisions and arms mention is also made in the 51st śloka

¹³⁷ Indian Antiquary, 1878, p. 136.

of the following things: "and also the cotton of the silkcotton tree and iron joined with flint." This suggests at once the ordinary Indian tinderbox commonly called Ramasvami, from the figure of the idol on its top.

The word for "fint" is in Tamil śakkimukki or śakimuki, and in Telugu cakimuki. If these terms are not onomatopoētic, imitating the sound when the flint is struck, they may be regarded as derivations (tadbhavams) from the Sanskrit śikhāmukha, flame-mouth.

I trust thus to have proved that gunpowder and firearms were known in India in the most ancient times, that the statement in the Sukraniti about powder is supported by the Nitiprakāšikā of Vaišampāyana, and that the quotation from the Rājalaksmīnārāyanahrdaya, a part of the ancient Atharvanarahasya, is an additional proof of it. I contend further that the knowledge of making gunpowder was never forgotten in India; but, that it was not earlier known in Europe is partly due to the isolated position of India, and partly also to the want of saltpetre in Europe, which prevented European nations from discovering the oxydizing properties of saltpetre. Moreover it must not be forgotten, that the preparation of gunpowder, even after it had become known, was kept everywhere a deep secret. The ancient Hindus enjoyed a well-deserved reputation as skilful artificers in iron and steel, the manipulation of which metals requires a considerable amount of ability, and these circumstances go surely far enough to justify the conclusion that the ancient Hindus were as well able to prepare firearms as the modern Hindus are now-a-days.138 I further believe to have proved through quotations from the Nītiprakāšikā, the Naisadha, and even by incidental evidence from Manu that firearms were well known in ancient times, though the

¹³⁸ See Nitiprakāsisa, VI, 51; Šalmalitūlikām osiva vāpyašmasārāšmaautiyutām.—The Remps hillmen, e.g., dig and smelt the iron-ore and cast it into musket-barrels.

interdict placed on them by Manu may have interfered somehow with their being generally used. On the other hand it must not be forgotten, that, though firearms existed, their construction was still in its infancy and that their application was very limited and did not diminish much the use of other arms. It ought also not to be overlooked that, as now, so also in ancient times, every thing connected with firearms and their improvement was surrounded with great mystery and the few books written on this subject were guarded like treasures and not communicated to the common crowd. The danger in handling firearms may also have deterred people from availing themselves of them so much as they otherwise would have done. Nevertheless the existence of guns and cannons in India in the earliest times seems to me to be satisfactorily proved from evidence supplied by some of the oldest Indian writings.

CHAPTER V.

ON THE ARMY ORGANISATION AND POLITICAL MAXIMS OF THE ANCIENT HINDUS.

THE SEVENTH SECTION OF THE FOURTH BOOK OF THE SUKRANITI.

- Senā šastrāstrasamyuktamanusyādigaņātmikā.
- Svagamānyagamā ceti dvidhā, saiva pṛthak tridhā, daivyāsurī mānavī ca, pūrvapūrvābalādhikā;

 An army is a numerous body consisting especially of men Army, provided with weapons and missiles.

It is of two kinds either self-moving or not self-moving; it is besides in a threefold manner an army either of gods, of demons or of human beings, each preceding being stronger than the succeeding.

- Svagamā yā svayamgantrī, yānagā'nyagamā smṛtā; pādatam svagamam, canyadrathāsvagajagam tridhā.
- Sainyāt vinā maiva rājyam, na dhanam, na parākramaḥ.
- Balino vašagāh sarve durbalasya ca šatravah bhavantyalpajanasyāpi, nṛpasya tu na kim punah.
- Šārīram hi balam, šauryabalam, sainyabalam tathā caturtham āstrikabalam, paūcamam dhībalam smṛtam, sastam āyurbalam, tvetairupeto Visnureva saḥ.
- Na balena vinātyalpam ripum jetum kṣamāḥ sadā devāsuranarāstvanyopāyairnityam bhavanti hi.
- Balam eva ripornityam parajayakaram param tasmat balam abhedyam tu dharayet yatnato nṛpaḥ.
- Senābalam tu dvividham, svīyam maitram ca tad dvidha, maulasādyaskabhedābhyām, sārāsāram punardvidhā.
- It is called self-moving, if it moves itself; not self-moving
 if it moves on vehicles. Infantry is self-moving; the
 not self-moving army moves in three ways, on
 carriages, horses and elephants.
- If there is no army, there is no government, no wealth, no power.
- 5. All become the subjects even of a man of humble birth if he is strong, all his enemies if he is weak; is this not more so in the case of a king?
- 6. There surely exists physical strength, bravery, likewise military strength, the fourth is the strength of weapons, the fifth is called intellectual power, the sixth is vital power; who is endowed with these is indeed another Visuu.
- By force alone are gods, demons and men ever able to conquer even a very weak enemy.
- An army is truly always the best means for the defeat of an enemy, a king should therefore zealously maintain an inconquerable army.
 - An armed force is of two kinds, it is either one's own, or it belongs to an ally; each with its own classes of

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- Asikşitam sikşitanı ca, gulmibhütam agulmakam, dattastrādi svasastrāstram, svavāhi dattavāhanam.
- Saujanyāt sādhakam maitram, svīyam bhṛtyā prapalitam, maulam bahvabdānubandhi, sādyaskam yattadanyathā.
- Suyuddhakāmukam sāram, asāram viparītakam, sikṣitam vyūhakuśalam, viparītam asikṣitam.
- Gulmībhūtam sādhikāri, svasvāmikam agulmakam, dattāstrūdi svāminā yat, svasastrāstram ato'nyathā.
- Kṛtagulmam svayangulmam, tadvacca dattavāhanam āranyakam Kirātādi yat svādhīnam svatejasē.
- Utsṛṣṭam ripuṇā vāpi blṛṭyavarge nivesitam bhedādhīnam kṛtam satroh sainyam satrubalam smṛṭam, ubhayam durbalam proktam, kevalam sādhakam na tat.

reserve and line, and those again are in a twofold manner divided into efficient and inefficient men.

- 10. It is either trained or not trained, formed or not formed into corps, provided or providing itself with arms, provided or providing itself with vehicles.
- An allied army is useful when kindly treated, one's own is maintained by pay; the reserve is of many years' standing, the line differs in this respect.
- The efficient is cager for a good fight, the inefficient is the reverse; the trained is clever in tactics, the untrained is the reverse.
- 13. The army formed in corps has a commander, that which is its own master is not well arranged in corps; the one has received arms from the king, the other which carries its own arms differs in this respect.
- 14. The forester corps, i.s., the Kirstas and similar tribes, which is subdued by the power of the king, is formed into corps or has formed itself into corps, after having been supplied with vehicles.
- 15. The army of the enemy which was given up by the foo, or which having entered his service is won over by dissension, is still regarded as hostile; both are regarded as weak, and especially as not trustworthy.

- Samairniyuddhakusalairvyäyämairnatibhistathä vardhayet bähuyuddärtham bhojyaih särirakam balam.
- Mṛgayābhistu vyāghrāṇām śastrāstrābhyāsatah sadā vardhayet śūrasamyogāt samyak śauryabalam nṛpah.
- Senābalam subhrtyā tu tapobhyāsaistathāstrikam yardhayet áāstracaturasamyogāt dhibalam sadā.
- Satkriyābhiścirasthāyi nityam rājyam bhavet yathā, svagotre tu tathā kuryāt tat āyurbalam ucyate; yāvat gotre rājyam asti tāvat eva sa jīvati.
- Caturguņam hi pādātam ašvato dhārayet sadā, pañcamārhéānstu vṛṣabhān aṣṭārhéāñśca kramelakān;
- Caturthānisān gajān ustrāt, gajārdhānsea rathānstathā rathāt tu dviguņam rājā brhannālikam eva ca.
- 16. One should increase the physical strength for pugilistic combats by diet and by athletic exercises and wrestling with equals and with those who are experts in close fighting.
- 17. A king should always well encourage bravery by tiger-hunts, by practice with weapons and arms and through association with brave men.
- 18. He should keep up his military strength by good pay, but the strength of his weapons by penance and practice; and his intellectual power by having always intercourse with wise persons.
- 19. That his kingdom may always be long lasting in his family, he should effect by good deeds, this is called vital power; as long as the kingdom remains in his family, he lives indeed.
- A king should always maintain four times as many foot. Proportion of different soldiers as horses, for every five horses one bull, for arms to every eight horses one camel;
- for every four camels one elephant, for every two elephants one chariot, for every chariot two big guns.

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10

Proportion

¹³⁹ See pp. 4-6. The proportion of the different parts to each other is represented by 5 chariots, 10 elephants, 40 camels, 64 bulls, 320 horses, and 1.280 men.

- Padátibahulam sainyam madhyāsvam tu gajālpakam tathā vṛṣoṣṭrasāmānyam rakṣet nāgādhikam na hi.
- Savayassāravesauca šastrāstram tu prthak šatam laghunālikayuktānām padātīnām śatatrayam ;
- Ašītyašvān ratham caikam brhannāladvayam tathā, uştrān dasa gajau dvau tu šakatau sodasarsabhān ;
- Tathā lekhakasatkam hi mantritritayam eva ca, dhārayet nṛpatih samyak vatsare lakṣakarṣabhāk.140
- 50

- 22. He should keep an army with many foot-soldiers, with a moderate number of horses, but with few elephants; likewise with a small number of bulls and camels, but not with many elephants.
- A prince, who gets a lac of karsas a year, should maintain well with weapons and missiles respectively one hundred men, 300 foot-soldiers with small firearms, who are (all) equal in age, strength and dress;
- 24. eighty horses and one chariot; likewise two big guns; ten camels, two elephants, two waggons and sixteen bulls;
- likewise also six clerks and certainly three ministers.

¹⁴⁰ See Lilavati, 6l. 2-4.

Varstakanam dasakadvayam yat sa kakini tasca panascatamah te sodaša drumma ihavagamyo drammaistatha sodašabhišca niskab.

Tulya yavabhyam kathitatra gunja vallaistrigunjo dharanam ca

gadyanakastaddyayam indratulyairvallaistathaiko dhatakah pra-

Dasardhaguñjam pravadanti māşam māşahvayaişsodafabhiśca karşaḥ karşaiscaturbhisca palam tula tacchatam suvarmasya suvarmasañ-

That is 20 Vard/akas are 1 Kakini, 4 Kdkinis 1 Papa, 16 Papas 1 Dramma, 16 Drammas 1 Nieka. 2 Yavas are 1 Gunja, 3 Gunjas 1 Valla,

⁸ Vellas 1 Dharaps, 2 Dharapas 1 Gadyanaka and 14 Vallas

¹ Dhataka. Further 10; Guéjas are 1 Masa, 16 Masas 1 Karpo,

⁴ Karşus 1 Pala, 100 Palas 1 Tuls and a Tula is equal to a Supergo.

- Sambhāradānabhogārtham dhanam sārdhasahasrakam, lekhakārthe satam māsi mantryarthe tu satatravam;
- Trišatam dāraputrārthe vidvadarthe šatadvayam sādyašvapadagārtham hi rājā catussahasrakam;
 Gajostravrsanālārtham vyayīkuryāt catuššatam
- 55
- seşam kose dhanam sthāpyam rājñā sārddhasahasrakam.
- Prativarsam svavešārtham sainikebhyo dhanam haret.
- The king should spend on provisions, largesse and pleasure Expend. fifteen hundred karsas, on clerks one hundred a month, iture.
 but on ministers three hundred;
- 27. on his wife and son three hundred, on learned men two hundred, on elephant-drivers, horses (cavalry) and foot-soldiers four thousand;
- 28. on the straw for elephants, camels and bulls four hundred. The remaining money fifteen hundred karsas should be deposited by the king in the treasury.¹⁴¹
- 29. The king should deduct every year a sum of money from the soldiers for their dress.

							Per Mensem.		
Provisions, largesse and pleasure				••		1,500 K	arşas.		
Clerks (one clerk			••				100		
Ministers (one m	inister	at 100	K.)			••	300	**	
Wife and family						••	300	**	
Learned men				**	**		200	**	
Elephant drivers, cavalry and infantry						4,000	**		
Straw		••			••		400	**	
Reserve funds		••	••	••	••	• •	1,500	**	
					Total	١	8,300		

or 99,600 Karsas, i.e., about a lac of Karsas a year.

The title of a sovereign depends on the yearly income his country yields to him. A Simunita is called a prince who receives up to 3 lacs, a Mindalika gets up to 10 lacs, a Kajis up to 20 lacs, a Mahdreja up to 50 lacs, a Sevara up to a krore or ten millions, a Seward up to 10 krores, and a First up to 25 krores. To a Sitrandianums is subjected the whole earth with its seven islands.

 Lohasāramayah cakrasugamo, mañcakāsanah, svāndolāyitarūdlisstu, madhyamāsanasārathih,

svāndolāyitarūdhastu, madhyamāsanasārathih, 60
31. Šastrāstrasandhāryudara, istacehāyo, manoramah,
evamvidho ratho rājnā raksvo nitvam sadašvakah.

6K

 Nilatālurnīlajihvo vakradanto hyadantakah dīrghadvesī krūramadah tathā prsthavidhūnakah.

 Dasastonanakho mando bhuvisodhanapucchakah evamvidho' nistagajo, viparitah subhavahah.

34. Bhadro, mandro, mrgo, misro gajo jātyā caturvidhah.

- An iron-made carriage, well going on wheels, provided with a Carriage.
 couch as a seat; on which is fixed a swing, with a charioteer on the middle seat;
- with an interior carrying weapons and missiles, giving agreeable shade, and (altogether) beautiful—such a carriage provided with good horses, should always be kept by the king.
- 32. An elephant with a dark blue palate, a dark blue tongue, Elephant. a crooked tooth, toothless, which bears malice a long time, has fierce rut, waddles likewise with his hinder part;
- with ten or seven claws, is slow, which rubs the ground with his tail—such an elephant is undesirable, the opposite confers benefits.
- The elephant is of four kinds according to its race; either a Bhadra (propitious), Mandra (pleasing), Mrga (deer), or a Miśra (mixed).

See Sukrantti, I, 184-187.

Sámantah sa nrpah prokto yavat laksatrayavadhi tadardhvam dasulaksanto nrpo mandalikah amrtah.

Tadordhvam tu bhavet raja yavat vimaatilaksakah. pañcasat laksaparyanto maharajah prakirtitah

Tatastu koţiparyantah svarāţ, samrāţ tatah param daśakoţimito yavat, virāţ tu tadanantaram

Pañcasat koţiparyantaḥ, sarvabhaumastataḥ param saptadvipā ca pṛthivi yasya vasya bhavet sadā.

- Madhvābhadantah sabalah samāngo vartulākṛtih sumukho' vayavaśreṣtho jñeyo bhadra gajah sadā.
- Sthūlakukṣī simhadrk oa bṛhattvāggalasuṇḍakaḥ madyamāvayavo dhīrghakāyo mandragajassmṛtaḥ.

 Tanukanthadantakarnasundah sthulaksa eva hi suhrasvadharamedhrastu vamano mrgasanjinakah.

- Esam lakşmairvimilito gajo miśra iti smṛtaḥ;
 bhinnam bhinnam pramaṇam tu trayaṇam api kirtitam.
- Gajamāne hyangulam syāt astabhista yavodaraih caturvimsatyangulaistaih karah prokto manīsibhih;
- Saptahastonnatirbhadre hyastahastapradirghatā parināho dašakarah udarasya bhavet sadā.
- The elephant which has honey-coloured teeth, is strong, well
 proportioned, has a globular shape, good head and
 excellent limbs, is always known as a Bhadra.
- The elephant which has a huge belly, and a lion's eye, a thick skin, throat and trunk, middle-sized limbs, a long body, is styled Mandra.
- 37. The elephant which has a small neck, teeth, ears and trunk, a peculiarly big eye, but a very small underlip and membrum, and is dwarfish, is called Mrga.
- 38. The elephant which is mixed with the marks of these three is called Miśra. It is also mentioned, that these three elephants differ respectively in size.
- 39. An angula (the breadth of a thumb), when applied for the measurement of an elephant, should consist exactly of eight corns, 24 such angulas are declared by wise men to be an elephantine hand.
- 40. The height of a Bhadra is 7 cubits, its length 8 cubits, the circumference of its belly should always be 10 cubits.

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- Pramāņam mandramṛgayorhastahīnam kramāt ataḥ kathitam dairghyasamyam tu munibhirbhadramandrayoh.
- Bṛhadbhrūgaṇḍaphālastu dhṛtaśīrṣagatiḥ sadā gajaḥ śreṣṭhastu sarveṣām śubhalakṣaṇasamyutaḥ.
- Pañcayavāngulenaiva vājimānam pṛthak smṛtam, catvārimāngulamukho vājī yaścottamottamaḥ.
- Şaţtrimsadangulamukho hyuttamah parikirtitah dvatrimsadangulamukho madhyamah sa udāhṛtaḥ.
- Aşţāvimsatyangulo yo mukhe nīcah prakīrtitah;
 vajinām mukhamanēna sarvāvayavakalpanā.
- 46. Auccam tu mukhamānena triguņam parikīrtitam.
- 41. The size of a Mandra and Mrga is respectively one cubit less; though the length of a Mandra and Mrga is by sages declared to be the same.
- 42. The best of all elephants is surely that, which has large brows, cheek and forehead, bears always its head firmly, and is endowed with auspicious marks.
- 43. By an angula of only five barley grains is the equine Horse, measure separately recorded. A horse whose head is 40 angulas (long) is regarded as the very best.
- 44. A horse whose head is 36 angulas long is surely considered a very fair one; a horse whose head is 32 angulas long is declared to be a middling one.
- 45. A horse whose head is 28 angulas long is regarded as an inferior one. The proportion of all the limbs of a horse is measured by the length of the head.
- The height is declared to be three times the length of the head.

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- 47. Siromanim samārabhya puechamūlāntam eva hi tritīyāmšādhikam dairghyam mukhamānāt caturgunam pariņāhastūdarasya triguņastryangulādhikah.
- 48. Śmaśruhinamukhah kāntapragalbhöttunganāsikah dírghoddhatagrivamukho hrasvakuksikhuraśrutih;
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- Turapracandavegaśca haińsameghasamasvanah nātikrūro nātimṛdurdevasatvo manoramah; sukāntigandhavarnasca sadgunabhramarānvitah.
- Bhramarastu dvidhāvarto vāmadaksinabhedatah pūrņo pūrņah punardvedhā dīrgho hrasvastathaiva ca.
- Štrīpundehe vāmadakṣau yathoktaphaladau kramāt na tathā viparītau tu šubhāšubhaphalapradau.
- 47. The length beginning with the poll up to the very root of the tail is 11 of the height, or four times the length of the head, the circumference of the belly is three times the length of the head and three angulas besides.
- 48. A horse which has a face without whiskers, is beautiful, courageous, has a high nose, a long and raised crest and head, a short belly, hoof and ear;
- 49. is impetuous and fast, neighs like a cloud or a goose (hames), is neither too fierce nor too mild, is a pleasing Decasates (godlike); it is of excellent beauty, flavour, and colour, and endowed with feathers of good qualities.
- 50. A feather is turned in two ways, either to the right or left, Feathers is full or not full, and is further in a two-fold manner horse. either long or short.
- 51. The left-and right-side feathers of mares and stallions are respectively, as said, auspicious, but not thus, if they are on opposite sides; for they have then neither good nor bad consequences. 13

- Nīcordhvatiryanmukhatah phalabhedo bhavet tayoh sankhacakragadāpadmavedisvastikasannibhah;
- Präsädatoraņadhanussupūrņakalašākṛtiḥ svastikasranmīnakhadgašrīvatsābhaḥ šubho bhramah.
- Näsikägre laläte ca sankhe kantheca mastake ävarto jäyate yesäm te dhanyästuragottamäh.
- Hrdi skandhe gale caiva kaţideśe tathaiva ca nābhau kukṣau ca pārśvāgre madhyamāḥ samprakīrtitāh.
- Lalāţe yasya cāvartadvitayasya samudbhavah mastake ca tṛtīyasya pūrnaharşo'yam uttamah.
- Prsthavamse yadāvarto yasyaikah samprajāyate sakarotyasvasanghātān svāminah sūryasanjinakah.
- Trayo yasya lalāṭasthā āvartāstiryaguttarāḥ trikūṭaḥ sa parijñeyo vājī vrddhikarah sadā.

- There will be a difference in efficiency according as its mouth is low, high or oblique. If the feather is like a shell, wheel, club, lotus, altar, portico;
- 53. like an upper story, arch, bow, well-filled pitcher, like a triangle, chaplet, fish, sword, a mole on the breast, it is a lucky feather.
- 54. The horses on whose tip of the nose, forehead, temple, throat or skull exists a feather, are the best.
- 55. Those horses are regarded as middling, which have it on the heart, shoulder, neck, likewise on the hips, on the navel, belly and foreribs.
- 56. That horse is the best Paradarsa (fulljoy) on whose temple rises a double feather, and on whose skull rises a third.
- That horse on whose backbone rises one feather, is called Surya (sun) and procures to his master masses of horses.
- 58. That horse on whose forehead stand three oblique feathers, is called *Trikūṭa* (threepeaked) and it gives always prosperity to its master.

59.	Evam eva prakāreņa trayo grīvam samāśritāh	
	samāvartāh sa vājīšo jāyate nṛpamandire.	
60.	Kapolasthau yadāvartau dršyete yasya vājinah	
	yaśovrddhikarau proktau rājýavrddhikarau matau.	120
61.	Eko vätha kapolastho yasyävartah pradréyate	
	sarvanāmā sa vikhyātah sa iechet svāmināšanam.	
62.	Gandasamstho yadāvarto vājino daksiņāśritah	
	sa karoti mahāsaukhyam svāminam sivasañjñikaḥ.	
63.	Sahridvāmāśritah krūrah prakaroti dhanaksayam	12
	indrākṣau tāvubhau sastau nṛparājyavivṛddhidau.	
64.	Karnamüle yadāvartau stanamadhye tathā parau	
	vijayākhyau ubhau tau tu yuddhakāle yaśahpradau.	
65.	Skandhapäréve yadāvartau sa bhavet padmalakṣaṇaḥ	
	karoti vividhan padman svaminah santatam sukham.	13
	What is the heat house in the Winele nelses on whose neck	
59.	That is the best horse in the King's palace, on whose neck	
	are also placed three feathers in such a manner.	
60.	The two feathers which on a horse's cheeks are seen stand-	
	ing, are called augmentors of fame and are esteemed	
	as augmentors of kingship.	
61	 A horse, on whose left cheek is observed a feather standing, 	
	is called Sarvanāmā, and it may wish for the destruc-	

62. The horse on whose right cheek stands a feather renders his master very happy, it is called Sics (prosperous).

tion of its master.

63. That bad (feather) on the left side of the heart produces loss of wealth, the two excellent Indrakes (Indra's eyes) increase the kingdom of the king.

64. A horse which has two feathers on the root of the ear, or which has also two on the middle of the breast; these both are called *Vijaya* (victory) and give glory in time of war.

65. A horse, which has two feathers on the shoulderblade, should be called Padma (wealth), it gives many virtues and continual happiness to its master.

- Năsămadhye yadăvarta eko vă yadi vă trayam cakravarti sa vijñeyo văji bhūpālasañjñikah.
- Kanthe yasya mahavarta ekah éresthah prajayate cintamanih sa vijñeyah cintitarthasukhapradah.
- 68. Śuklakhyau phalakanthasthau avartau vrddikirtidau.
- Yasyāvartau vakragatau kukṣyante vājino yadi,
 sa nūnam mṛṭyum āpnoti kuryāt vā svāmināśanam.
- Jānusamsthā yadāvartāh pravāsaklešakārakāh, vājimedhre yadāvarto vijayašrīvināšanah.
- Trikasamstho yadāvartah trivargasya pranāšanah pucchamūle yadāvarto dhūmaketuranarthakṛt, guhyapucchatrikāvartī sa kṛtāntabhayapradah.

- 66. According as there is one feather or there are three feathers on the midst of the nose, the horse is called Cakravarā or Bhūpāla.
- The horse on whose throat is one very good large feather, is called Cintamani, bestowing every imaginary happiness and wealth.
- 68. Two feathers, which stand on the forehead and throat (and are) called Sukis (bright), give fame and prosperity.
- 69. If at the extremity of the belly of a horse are two curved feathers, that will surely incur death or cause the destruction of its master.
- 70. If there are feathers on the knees, they cause troubles and sojournings; if a feather is on the penis of a horse, it ruins victory and prosperity.
- 71. If a feather stands on the lower spine it is the destroyer of three things, it if the feather Dhūmakstu (comet) is on the root of the tail, it produces trouble; a horse which has a feather on the anus, tail and lower spine causes fear of death.

ter Dharms, arths, kama.

- Madhyadandā pāršvagamā saiva šatapadī kace atidustā ogusthamitā dīrghādustā yathā yathā.
- Aśrupātahanugandahrdgalapröthavastisu kaţisankhajānumuşkakakunnābhigudesu ca; dakṣakukṣau dakṣapāde tvašubho bhramarah sadā.

 Galamadhye pṛṣṭhamadhye uttaroṣṭhe' dhare tathā, karṇanetrāntare vāmakukṣau caiva tu pārśvayōḥ ūrusu ca śubhāvarto vājinām agrapādayoh.

- Ävartau säntarau phälo süryacandrau subhapradau militau tau madhyaphalau hyatilagnau tu dusphalau.
- 72. If the feather is in the midst formed like a stick, is turned towards the sides, is on the head, it is a Satapadī; it is very bad if it is a thumb broad, in proportion as it is long it is good.
- 73. If a feather is on the place where the tears fall, on the cheek, jaw, heart, neck and abdomen, on the buttock, temple, knee, penis, hump, navel and anus, if on the right belly, on the right foot, that is always an unlucky feather.
- 74. A good horse-feather is on the middle of the neck, on the middle of the back, on the upperlip, likewise on the underlip, between eye and ear, on the left belly, on the two sides, on the loins and on the frontlegs.
- Two feathers apart on the forehead, Süryscandres (sun and moon) give luck, if not apart they are pretty good, but surely unlucky, if much mixed.
- 76. Three perpendicular and apart standing feathers on the forehead are lucky, but two (similar) much mixed feathers are unlucky.

- Trikonatritavam phāle āvartānām tu duhkhadam galamadhye subhah tvekah sarvāsubhanivāraņah.
- 78. Adhomukhah subhah pāde phāle cordhvamukho bhramah nacsivātyašubhā prsthamukhī šatapadī matā.
- Mědhrasva pašcát bhramarí staní vájí sa cášubhah, bhramah karnasamīpe tu śrngī caikah sa ninditah.
- 80. Grīvordhvapāršve bhramarī hyekarašmih sa caikatah pādordhvamukhabhramsrī kilötpātī sa ninditah.
- Šubhāśubhau bhramau yasmin sa vājī madhyamaḥ smrtah mukhe patsu sitah pancakalyanosyah sada matah.
- 77. Three triangular feathers on the forehead are unlucky: but one lucky feather on the middle of the neck, suspends all bad ones.
- 78. A feather on the foot with its face downwards, and one on the forehead with its face upwards, is lucky, but the Satapadi is not regarded as very lucky, if it is turned towards the back.
- 79. If the feather is a Stani (having a nipple) behind the penis, the horse is also unlucky, but if the feather is a Sragī (horned) near the ear, it is blamed.
- 80. The feather Ekarasmi (having one string) on one side on the upper part of the neck, (and) the feather Kilotpäti (destroying bolts) on the foot with its face upwards is despised.
- 81. The horse in which are lucky and unlucky feathers is a Madhyama (middling), that which is white on the head and feet is always esteemed as a Pañoakalyāṇa (excellent for five things).

- Sa eva hrdaye skandhe pucche śveto'stamangalah, karne śyamah śyamakarnah sarvatah tvekavarnabhāk.
- Tatrāpi sarvatah éveto medhyah pūjyah sadaiva hi, vaidūryasannibhe netre yasya sto jayamangalah.
- 84. Miśravarnah tvekavarnah pūjyah syāt sundaro yadi.
- Kṛṣṇapādo hayo nindyaḥ tathā śvetaikapādapi rūkṣo dhūsaravarṇaśca gardhabhābho'pi ninditaḥ.
- Kṛṣṇatāluḥ kṛṣṇajihvaḥ kṛṣṇoṣṭḥaśca vininditaḥ sarvatah kṛṣṇavamo yah pucche śvetaḥ sa ninditaḥ.
- Sušvetaphālatilako viddho varņāntarena ca sa vājī dalabhañjī tu yasya so'pyatininditaḥ.

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- 82. The horse which is white on the heart, shoulder and tail is an Asjamangala (excellent for eight things), that, which has a black ear and only one other color (besides) is a Syāmakarņa (black ear).
- 83. That which except there (the black ear) is totally white, is always to be worshipped as a Medhya (sacrificial), that whose eyes are like a turquoise is a Jayamangala (excellent for victory).
- 84. Whether a horse has different colours or has one colour it should always be esteemed, if it is beautiful.
- 85. A horse with a black foot is despisable, likewise if it has only one white foot, one which is rough and is greycoloured is always blamed as looking like a donkey.
- 86. A horse with a black palate, black tongue and black lip is despised; a horse which is everywhere black but is white at the tail is blamed.
- 87. That horse which has on its forehead a very white mark, which is perforated by another colour is a Dalabhāŋī (Piece breaking) and its owner is also much blamed.

- Samhanyāt varņajān dosān snigdhavarņo bhavet yadi; balādhikašca sugatirmahān sarvāngasundarah, natikrūrah sadā pūjyo bhramādyairapi dūsitah.
- Parinaho vṛṣamukhāt udare tu caturguṇaḥ sa kakut triguṇoccam tu sardhatriguṇadīrghatā.

- Saptatālo vṛṣaḥ pūjyo guṇairetairyuto yadi na sthāyī na ca vai mandaḥ suvoḍha hyangasundaraḥ, nātikrūraḥ supṛṣṭhaḥ ca vṛṣabhaḥ śreṣṭha ucyate.
- Trimsadyojanaganta va pratyaham bharavahakah dasatalasca¹⁴³ sudrdhah sumukhostrah prasasyate.
- Satam ayurmanusyanam gajanam paramam smrtam manusyagajayorbalyam yavat vimsatiyatsaram.
- 88. If however the colour is agreeable it suspends all faults arising from colour; and a horse which is very strong, goes well, is large, beautiful in all its limbs, not very fierce is always to be honoured, even if spoiled by feathers.
- The circumference of the belly is four times the size of a Bull. bull's head, three times its size is the height and three and a half times its length.
- 90. A bull which is seven spans high, if provided with good qualities, is to be respected. A bull which does neither stop, nor is slow, carries well, is moreover beautiful in limbs, is not very fierce, has a good back; is called the best bull.
- A camel, which goes daily thirty yojanas while carrying Camel. loads, is ten spans high, very strong and has a fine head, is praised
- 92. A hundred years is recorded as the longest life of men and Age of elophants, the youth of men and elephants is reckoned elephant up to twenty years.

^{143 &}quot; navatalasca" is a different reading in one MS.

- Nṛṇām hi madhyamam yāvat saṣṭivarṣam vayassmṛtam
 aṣītivatsaram yāvat gajasya madhyamam vayaḥ.
- Catustrimsat tu varsanam asvasyayuh param smrtam pañcavimsati varsam hi param ayurvrsostrayoh.

- Bályam aávavrsostránám pañcasannvatsaram matam madhyamam yavat södasábdam várdhakyam tu tatah param.
- Dantānām udgamairvarņairāyurjāeyam vrsāsvayoh asvasya sat sitā dantāb prathamābde bhayanti hi.

- Kṛṣṇalohitavarṇāstu dvitīye'bde hyadhogatāḥ, tṛtīye'bde tu sandamsau madhyamau patitodgatau.
- Tatpārēvavartinau tau tu caturthe punarudgatau, antyau dvau pañcamābde tu sandamsau punarudgatau.
- 93. The middle age of men is estimated to last up to sixty years, the middle age of an elephant up to eighty years.
- 94. On the other hand thirty-four years are considered as the Age of utmost age of horses, while twenty-five years are surely horses. the highest age of bulls and camels.
- 95. The youth of horses, bulls and camels extends up to five Age of years, the middle age up to sixteen years, but after-camels. wards is old age.
- 96. By the growth and colour of the teeth the age of bulls and Testh of horses can be known. Six white teeth are surely in the horses. first year of a horse,
- but in the second year the lower teeth become dark red coloured, in the third year the middle biters fall out and come again;
- 98. in the fourth year those two on their sides full out and come again, in the fifth year the two biters at the end fall out and come again;

 Madhyapāršvāntagau dvau dvau kramāt kṛṣṇau ṣaḍabdataḥ; 200

- navamābdāt kramāt pītau tau sitau dvādašābdatah.
- Dasapañcābdataḥ tau tu kācābhau kramataḥ smṛtau aṣṭādasābdataḥ tau hi madhvābhau bhavatah kramāt,

101. Šankhābhau caikavimšābdāt caturvimšābdatah sadā chidram sancalanam pāto dantānām ca trike trike.

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- Prothe suvalayastisrah pūrnāyuryasya vājinah, yathā yathā tu hīnāstā hīnam āyustathā tathā.
- Janūtpāto tvosthavādyo dhūtaprstho jalāsanaḥ gatimadhyāsanaḥ prsthapātī pascādgamordhvapāt.
- Sarpajihvo rūkṣakāntirbhīruraśvo'tininditaḥ, sacchidraphālatilako nindya āśrayakṛt tathā.

- 99. from the sixth year the two middle, side and end teeth become gradually black, each pair becomes in its turn yellow from the ninth year; and white from the twelfth year.
- 100. From the fifteenth year each pair is said to become in its turn glass-coloured, from the eighteenth each pair becomes by degrees honey-coloured;
- 101. from the twenty-first year each pair becomes shell-coloured, from the twenty-fourth each pair becomes in each third year hollow (24th-26th year), shaky (27th-29th), and falls out (30th-32nd).
- 102. The horse which has three deep wrinkles in the nostrils has a long life; in proportion as the wrinkles are deficient the life is also limited.
- 103. A horse which jumps up on its knees, makes a noise with its lips; sits down in water, stands still in the midst of the road, falls on its back, jumps upwards while going backwards,
- 104. which has a tongue like a serpent, is of disagreeable colour, and timid is much deepised; despised is also a horse whose mark on the forehead has flaws and which stands often still.

- Vṛṣasyāṣṭau sitā dantāḥ caturthe'bde'khilāḥ smṛtāḥ, dvāvantyau patitotpannau pañoame'bde hi tasya vai.
- Şaşthe tüpäntyau bhavatah saptame tatsamipagau, astame patitotpannau madhyamau daéanau khalu.

- Krsnapītasitaraktasankhacehāyau dvike dvike kramāt hi dve ca bhavatah calanam patanam tatah.
- Uştrasyoktaprakāreņa vayojñānam tu vā bhavet.
- Prerakūkarsakamukho'ńkuśo gajavinigrahe hastipakairgajastena vineyassugamāya hi.

- 110. Khalinasyordhvakhandau dvau pärsvagau dvädasängulau tatpärsväntargatäbhyäm tu sudrdhäbhyäm tathaiva ca.
- 105. Eight complete white teeth are mentioned as existing in Teeth of a the fourth year of the bull, in its fifth year two molars fall out and rise again;
- 106. in the sixth year the two next to the molars, in the seventh the two next ones, in the eighth year the two middle biters fall and come again.
- Every second year they get by degrees black, yellow, white, red and shell-coloured. Each pair becomes gradually loose and falls out.
- 108. The knowledge of the age of a camel may be likewise Age of a reckoned according to the above-mentioned rule.
- 109. For training an elephant a hook is used by the elephant-Elephant-drivers, which has one point for driving on and another training for drawing back; by this hook the elephant is guided to go well.
- 110. The two upwards and sideways pointing parts of a bridle- Bridle. bit are respectively on the whole twelve angulas long, with two inside but very strong pieces,

¹⁶⁶ Black in the 9th and 10th year, yellow in the 11th and 12th, white in the 12th and 14th, red in the 15th and 16th, shell-coloured in the 17th and 18th, in the 19th the end teeth get locee, in the 20th the end teeth fall out and the last but one become loose, &c. &c.

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- Vărakākarşakhandābhyām rajvarthavalayair yutau evamvidhakhalīnena vašīkuryāt tu vājinam.
- Näsikäkarşarajvä tu vṛṣoṣṭram vinayet bhṛśam tikṣṇāgro yaḥ saptaphālaḥ syāt eṣām malaśodhane.

 Sutādanairvineyā hi manusyāh pašavah sadā, sainikāstu višeseņa na te vai dhanadandatah.

 Anüpe tu vṛṣāśvānām gajosṭrānām tu jāngale sādhārane padātīnām nivešāt rakṣanam bhavet.

115. Šatam šatam yojanānte sainyam rāstre niyojayet.

- Gajostravrsabhāsvāh prāk śresthāh sambharavahane;
 sarvebhyah śakatāh śresthā varsākālam vinā smrtāh.
- Na călpasădhano gacchet api jetum ripum laghum mahatātyantasādyaskabalenaiva subuddhiyuk.
- 111. and are joined with rings for reins both for stopping and pulling back; with such a bridlebit one may manage a horse.
- 112. One may guide firmly a bull with a rein pulling through Bullreinits nose, in cleaning them of dirt should be (used) an instrument with seven sharp-pointed combs.
- 113. Men and beasts should certainly always be managed by severe beating; but soldiers specially; they should not be subjected to fines.
- 114. By keeping horses and bulls in a marshy country, elephants in a jungle (and) foot-soldiers in a plain, their safety will be ensured.
- 115. At the end of each yojann, 145 a king should keep in his Distribution inhabited kingdom a troop of one hundred soldiers.
- 116. Elephants, camels, bulls and horses are in the order of precedence excellent for carrying provisions, better than all these are stated to be cars, except in the rainy season.
- 117 A wise general should not march even against a weak enemy Precepts insufficiently prepared, but only with a very numerous on fighting and army consisting of troops of the line.

¹⁶⁵ A yejona is a measure of different length, its shortest extent amounts to 2\(\frac{1}{2}\) and its longest to about 15 English miles; it is generally fixed at 4 krosas or 9 English miles.

- Asikṣitam asāram ca sādyaskam tūlavaoca tat, yuddham vinā'nyakāryeşu yojayet matimān sadā.
- Vikartum 'yatate'lpo'pi prapte pranatyayo'nisam na punah kimtu balavan vikarakaranaksamah.
- 120. Apibahubalo'śūro na sthātum kṣamate raṇe kim alpasādhano'śūrah sthātum śakto'riṇā samam?
- Susiddhālpabalaššūro vijetum kṣamate ripum, mahāsusiddhabalayuk šūrah kim na vijesyati.
- 122. Maulasiksitasarena gacehet raja rane ripum pranatyaye'pi maulam na svaminam tyaktum icehati.
- 123. Vāgdaņdaparuseņaiva bhrtihrāsena bhītitaḥ nityam pravāsāyāsābhyām bhedo'vasyam prajāyate.
 - 118. An undisciplined and inefficient line is (weak) like cotton; a wise man should always apply it to all other purposes but fighting.
 - 119. A weak person, if he is in danger of his life, tries always to fight, how much more a strong one, who is able to attack?
 - 120. A coward though he has a very strong army cannot stand in the battle-field, how can a coward with small support stand in a battle?
 - 121. A hero who has a small but well-disciplined army is able to conquer the enemy; (if so) will not a hero with a strong well-provided army conquer?
 - 122. A king should go to battle against an enemy with an efficient and disciplined reserve, the reserve does not wish to leave his master even when in danger of death.
 - 123. Discontent arises necessarily from severe reprimands and severe punishments, from fear, from reductions of pay, from always sojourning abroad and from fatigues.

 Balam yasya tu sambhinnam manāk api jayah kutah šatroh svasyāpi senāyā ato bhedam vicintayet.

 Yathā hi šatrusenāyā bhedo'vasyam bhavet tathā, kautilyena pradānena drāk kuryāt nṛpatiḥ sadā.

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 Sevayātyantaprabalam natyā cārim prasādhayet prabalam manadanabhyam yuddhairhinabalam tatha.

127. Maitryā jayet samabalam bhedaih sarvān vasam nayet, šatrusamsādhanopāyo nānyah subalabhedatah.

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- Tāvat paro nītimān syāt yāvat subalavān svayam mitram tāvat ca bhavati puştāgneh pavano yathā.
- 129. Tyaktam ripubalam dhāryam na samūhasamīpatah prthak niyojayet prak va yuddhartham kalpayet ca tat.
- 124. How can be victory to him, whose army is even a little discontented? he should therefore always investigate the discontent which exists in his army and in that of his enemy.

125. That discontent should necessarily prevail among the hostile army, a king should always speedily endeavour by deceitful means and bribes.

126. One should propitiate an overpowerful enemy by submis- Behaviour sion, a powerful one by demonstration of respect and towards an by presents, and a weak one (one should subdue) by fighting.

- 127. He should win over an equal in strength by friendship; by divisions he should subdue all. There is no other means of subduing an enemy than by (spreading) discontent among his strong army.
- 128. As long as an enemy is powerful he is able to govern, and so long he is a friend; as the wind is (a friend) of the strong fire.
- 129. The hostile army which has deserted to the king must be protected, but not kept near his own army; he should place it separately or arrange it in front for fighting.

130.	Maitryam	ārāt	prethabhage	pārévayorvā	$_{\rm balam}$	nyaset.	

 Asyate kṣipyate yat tu mantrayantragnibhisca tat astram tadanyataḥ sastram asikuntadikam oa yat.

- 132. Astram tu dvividham j

 neyam n

 n

 n

 nikam m

 n

 ntrikam t

 tath

 ...
- 133. Yadā tu māntrikam nāsti nālikam tatra dhārayet saha sastreņa nṛpatirvijayārtham tu sarvadā.

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- Laghudirghākāradhārabhedaiḥ śastrāstranāmakam prathayanti navam bhinnam vyavahārāya tad vidaḥ.
- Nälikam dvividham j
 ñeyam brhatksudravibhedatah.
- Tiryagürdhvacchidramulam nālam pañcavitastikam; mulāgrayorlaksyabheditilabinduyutam sadā.

- 130. He should place the friendly army near in the rear or on both sides.
- 131. Whatever is thrown or east by incantation, machine or fire Projectiles is a projectile, what is different is a weapon like the meapons. sword, the spear, &c.
- 132. The projectile weapon must be known to be of two kinds, Incantation arms, that consisting of tubes and that thrown by incantation. guns,
- 133. If here there are no incantation-arms a king should always weapons, keep for the sake of victory the tubular arms together with other weapons.
- 134. According as a new weapon and missile varies in its size, whether it is small or large, in its shape or blade, experts name it differently.
- 135. The tubular weapon should be known as being of two kinds, divided into large and small.
- 136. The tube is five spans long, its breech has a perpendicular Gun. and horizontal hole, at the breech and muzzle is always fixed a sesambead for aligning the sights.

- Yantrághátágnikit grávacúrnadhik karnamúlakam sukästhopängabudnam ca madhyangulabiläntaram.
- Svante'gnicarnasandhatráalakasamyutam drdham laghunalikam apyetat pradharyam pattisadibhih.
- Yathā yathaitat tvaksāram yathā sthūlabilāntaram yathā dirghabrhadgolam dūrabhedi tathā tathā.
- 140. Mülakilabhramat lakşyasamasandhanabhaji yat brhannalikasañjñam tet käşthabudhnavivarjitam pravähyam sakaţādyaistu suyuktam vijayapradam.
- Suvarcilavaņāt pañca palāni gandhakāt palam antardhūmavipakvārkasnuhyādyangāratah palam;

- 137. The breech has at the vent a mechanism which, carrying stone and powder, makes fire by striking. Its breech is well wooded at the side, in the middle is a hole an angula broad;
- 138. after the gunpowder is placed inside, it is firmly pressed down with a ramrod. This is the small gun which ought to be carried by foot-soldiers.
- 139. In proportion as its outside (bark) is hard, its hole is broad, its ball is long and broad; the ball reaches far.
- 140. A big tube is called (that gun) which obtains the direction of the aim by moving the breech with a wedge; its end is without wood; but it is to be drawn on cars, &c.; if well welded it gives victory.
- 141. Five weights (pala) of saltpetre, one weight of sulphur, Gunone weight of charcoal, which consists of Calatropis powde gigants, of Euphorbis nertifolis, and other (plants) and is prepared in such a manner that the smoke does not escape;

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- 142. Šuddhāt sangrāhya sancūrņya sammilya praputet rasaih snuhyarkāņām rasonasya šoşayet ātapena ca; pistvā šarkaravat caitat agnicūrņam bhavet khalu.
- 143. Suvarcilavaņāt bhāgāh sat vā catvāra eva vā nālāstrārthāgnicume tu gandhāngārau tu pūrvavat.

144. Golo lohamayo garbhagutikah kevalo'pi va sisasya laghunalarthe hyanyadhatubhavo'pi va.

 Lohasāramayam vāpi nālāstram tvanyadhātujam nityasammārjanasvaccham astrapātibhirāvrtam.

146. Angarasyaiva gandhasya suvarcilavanasya ca silaya haritalasya tatha sisamalasya ca.

 Hingulasya tathā kāntarajasah karpurasya ca jatornīlyāšca saralaniryāsasya tathaiva ca.

142. if all this is taken after having been cleansed, is then powdered, and mixed together, one should squeeze it with the juice of Calatropis gigantes, Euphorbia neriifolis and Allium sativum and dry in the sun; having ground this like sugar, it will certainly become gunpowder.

143. There may be six or even four parts of saltpetre in the gunpowder used for tubular arms, but the parts of sulphur and charcoal remain as before.

144. The ball is made of iron, and has either small balls in its inside or is empty; for small tubular arms it should be of lead or of any other metal.

145. The tubular projectile weapon is either of iron or of another metal, it is every day to be rubbed clean, and covered by gunners.

146. With a similar greater or less proportion of charcoal, sulphur, and saltpetre, of realgar, of opiment and likewise of graphite;

147. of vermilion, also of powder of magnetic iron oxide and of camphor, of lac, and of indigo and likewise of the pine gum (Pinus longifolis),

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148.	. Samanyūnādhikhairamsairagnicūrņānyanekasah						
	kalpayanti ca vettāraḥ candrikābhādimanti ca.						

- Kşipanti căgnisamyogāt golam lakşe sunālagam.
- Nălăstram śodhayet ădau dadyăt tatrăgnicūrnakam;
 niveśayet tat dandena nălamūle yathā drdham.
- 151. Tatah sugolakam dadyāt tatah karņe'gnicūrņakam, karņacūrņāgnidānena golam lakṣye nipātayet.
- Laksyabhedī yathā bāno dhanurjyāviniyojitah bhavet tathānusandhāya dvihastašea šilīmukhah.
- 153. Aşţaśrā pṛthubudhnā tu gadā hṛdayasamhitā; paṭṭiśah svasamo hastabudhnaścobhayatomukhah.

148. experts make gunpowder in many ways and of white and other colours.

149. By the application of fire they throw the ball coming from Gun-ball. the tube at the mark.

150. One should clean the tube first and then put gunpowder, About carry it down with the ramrod to the bottom of the tube and cleantill it is tight,

151. then put a good ball, and place gunpowder on the vent, and by setting fire to the powder at the vent discharge the ball towards its mark.

152. In order that the arrow despatched by the string of the Bow, bow should penetrate the object aimed at, the arrow which is put on should be two cubits long.

153. A club is octagonal, but broad at the end, rising (from the Club. ground) up to the heart; a battle axe is of the same axe. height (as the bearer), is in the middle one cubit broad and is double-headed.

 Isadvaktrascaikadhāro vistāre caturangulah kşurapranto nabhisamo drdhamuştissucandraruk khadgah, prasascaturhastadandabudhnah ksurananah.

Dasahastamitah kuntah phālāgrah sankubudhnakah.

 Cakram şadhastaparidhi kşuraprantam sunabhiyuk, trihastadandah trisikho, loharajjuh supasakah

 Godhumasamhitasthulapatram lohamayam dṛḍham, kavacam sasirastrāņam ürdhvakāyavišobhanam.

Tiksnägram karajam érestham lohasaramayam drdham.

 Yo vai supustasambhārah tathā sadgunamantravit bahvastrasamyuto rājā yoddhum icchet sa eva hi, anyathā duhkham āpnoti svarājyāt bhrašyate' pi ca. 315

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154. The sword is a little curved, has one blade, is four angulas Sword. broad, at the point sharp as a razor, reaches up to the navel, has a strong hilt and is as brilliant as the beautiful moon. The broad sword is four cubits long, Broad broad (at the hilt), and at the end-point sharp like a razor.

155. The lance is ten cubits long, ending in a (metal) point, Lance. and broad as a shaft.

156. The disk is six cubits in circumference, is at the edge Disk. like a razor and is to be handled in the very midst; Trident. the trident is three cubits long; a good lasso has iron Lasso. strings.

157. Armour consists of scales of the breadth of a grain of Armour. wheat, is of metal and firm, has a protection for the head, and is ornamented on the upper part of the body.

158. The fingertip of a gauntlet which is sharp at its end, is Gauntlet. of metal and is strong, is surely the best.

159. That king who has well supplied provisions, knows the Rules secret of the six principles of policy (see al. 174), and about has many weapons, wishes certainly to fight; if he is not in such position (and fights), he experiences distress, and is even expelled from his kingdom.

- 160. Äbibhratoh satrubhavam ubhayoh samyatatmanoh astradyaih svarthasiddhyartham vyaparo yuddham ucyate.
- 161. Mantrāstrairdaivikam yuddham, nālādyaisoa tathā

śastrabahusamuttham tu mānavam yuddham īritam.

- 162. Ekasya bahubhih sarddham bahunam bahubhisca va ekasyaikena va, dvabhyam dvayor va, tat bhavet khalu.
- 163 Kalam deśam śatrubalam drętva sviyabalam tatah upayan sadgunam mantram sambhuyat yuddhakamukab.
- Šaraddhemantašiširakālo yuddhesu cottamah vasanto madhyamo jñeyo'dhamo grīsmah smṛtah sadā.
- Varṣāsu na praśamsanti yuddham sāma smṛtam tadā.
- 160. The exertion of two self-controlled (parties) who harbour Definition enmity against each other with projectile weapons of war. and other arms for the accomplishment of their own benefit, is called war.
- 161. The fighting with incantations and projectile weapons Different is called divine, that with tubes and other instruments mode of demoniac, that with weapons and the arms (of the body) is human.
- If one fights with many, or many fight against many, or one fights against one, or two against two, that is surely a contest.
- 63. Having considered the time, place, the hostile army and also his own, the (four) expedients (i.e., negotiation, bribery, dissension and attack), the secret of the six principles of policy, he should think of war.
- 64. Autumn, winter and the chilly season are the best for Seasons of fighting, spring time should be regarded as middling, the year to be considered, and the hot season always as the worst.
- 65. In the rainy season they do not recommend war; for that time negotiation is advised.

166. Yuddhasambhārasampanno yadādhikabalo nṛpaḥ manotsāhī sušakunotpātī kālaḥ tadā śubhaḥ.

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- Karye'tyavasyake prapte kalo no cet yada subhah nidhaya hrdi visvesam gehe cihnam iyat tada.
- 168. Na kālaniyamah tatra gostrīvipravināšane.
- 169. Yasmin deée yathākālam sainyavyāyāmabhūmayaḥ parasya viparītāéca smṛto deéaḥ sa uttamaḥ.¹46

- Ätmanasca pareeam ca tulyavyäyämabhümayah yatra madhyama uddisto desah sästravicintakaih.¹⁴⁷
- 166. When a king has acquired all war materials, is very strong, persevering in his mind, (and) has obtained auspicious omens, then is the time.
- 167. But if the business is unavoidable, and the time is not Unavoid-propitious, he should go, after having meditated in war to be his mind on the Supreme Spirit and placed a (divine) accepted. symbol in his house.
- 168. There is no restriction as to time (for fighting) when cows, women, and Brahmans are being destroyed.
- 169. That position in which there are at the necessary time Manfields fit for the manocuvring of troops, the position couvring of the enemy being in this respect different, is mentioned as the best.
- 170. If his own good manceuvring fields and those of his enemies are equally good, the position is called a middling one by war experts.

¹⁶⁶ See Kamandakiya, XVI, 19.

^{16?} See Kamand., XVI, 20.

Atmanasca pareşam ca tulya vyayamabhumayah sumadhya mah sa uddişto desah sastrarthacintakaih.

- Arātisainyavyāyāmasuparyāptamahītalaḥ ātmano viparītaśca sa vai deśo'dhamaḥ snṛṭaḥ.¹⁴⁵
- Svasainyāt tu tritīyāmšahīnam šatrubalam yadi ašiksitam asāram vā sādyaskam svajayāya vai.

- Putravat pālitam yat tu dānamānavivarddhitam yuddhasambhārasampannam svasainyam vijayapradam.
- 174. Sandhim ca vigraham yānam āsanam ca samāśrayam dvaidhībhāvam ca samvidyāt mantrasyaitānstu sadgunān

- 175. Yabhih kriyabhih balavan mitratam yati vai ripuh sa kriya sandhirityukta vimraet tam tu yatnatah.
- Vikarşitah san vādhīno bhavet satrustu yena vai karmanā vigraham tam tu cintayet mantribhirnrpah.
- 171. If the ground is favorable for the manouvres of the army of the enemy, his position being quite the reverse, that position is mentioned as the worst.
- 172. If the hostile army is a third part less than his own, if its line is undisciplined and inefficient, (such circumstances) ensure his own victory.
- 173. If his own army is guarded like a son, is gratified by presents and honours, is provided with the materials for war, it is conferring victory.
- 174. He should understand the six principles of policy; alliance Six prinant and quarrel, marching, halting, refuge and separation. ciples of policy.
- 175. By what practices a strong enemy is won over to friendship, Alliance, that practice is called alliance; he should consider it anxiously.
- 176. A king should deliberate with his ministers about the war, War. by means of which his enemy may be injured and rendered dependent.

 Šatrunāšārthagamanam yānam svābhīstasiddhaye svaraksanam šatrunāšo bhavet sthānāt tadāsanam. 850

- 178. Yairgupto balavān bhūyāt durbalo'pi sa ā@rayaḥ, dvaidhībhāvaḥ svasainyānām sthāpanam gulmagulmatah.
- Balīyasābhiyuktastu nṛpo'nanyapratikriyaḥ āpannaḥ sandhim anvicehet kurvāṇaḥ kālayāpanam.

- Eka evopahärastu sandhiresa mato hitah, upahärasya bhedästu sarve'nye maitravarjitäh.¹⁴⁹
- Abhiyoktā balīyastvāt alabdhvā na nivartate upahārādrte yasmāt sandhiranyo na vidyate.
- 177. The going for the destruction of the enemy for the fulfil-Marching, ment of his own desires is marching; if through staying his own safety and his enemy's destruction is Halting-obtained, that is halting.
- 178. The protection which makes a weak man become strong, is Refugecalled refuge; the placing of his own armies in Separadifferent corps is separation.
- 179. If a king is attacked by a strong enemy and is not able to Political resist, he should (thus) afflicted make peace, obtaining advice. delay of time.
- 180. Alliance alone is regarded as a pleasant tribute; but an the other kinds of tributes are destitute of friendship.
- 181. As an enemy who has not received any benefit from his superior strength does not return (to his country); therefore no peace is known without a tribute.

¹⁴⁹ See Kamand., IX, 21, and Hitopadesa, IV, 126.

¹⁰⁰ See Kamand., IX, 22.
Abhiyokta beli yasmat alabdhva na nivartate upaharat rie tasmat sandhiranyo na vidyate.

- 182. Šatrorbalānusāreņa upahāram prakalpayet sevām vāpi ca svīkuryāt dadyāt kanyām bhuvam dhanam.
- Svasamantañsoa sandhiyat maitrenanyajayaya vai sandhih karyo'pyanaryena samprapyotsadayet hi sah.
- 184. Sanghātavān yathā veņurnividaih kantakairvītah na šakyate samucchettum veņuh sanghātavānstathā. 151
- 185. Balinā saha sandhāya bhaye sādhāraņe yadi, ātmānam gopayet kāle bahvamitreşu buddhimān.
- 186. Balinā saha yoddhavyam iti nāsti nidaršanam prativātam hi na ghanah kadācit api sarpati.¹³²
- 182. He should settle a tribute according to the strength of his enemy, or he should agree to do homage, or should give his daughter, land or money.
- 183. For the sake of conquering his enemy he should make an alliance with his neighbours; an alliance is even to be made with an unworthy ruler; having gained his object he may destroy him.
- 184. As a clump of bamboos surrounded by thick thorns cannot be torn out, thus also could not be annihilated Venu (?) who had a multitude of followers.
- 185. A wise king who has many enemies should guard himself in calamity by making an alliance with a strong king, who is exposed to the same danger.
- 186. There exists no example (to show), that one should fight with a strong enemy; a cloud surely does not move against the wind.

¹⁸¹ See Hitop., IV, 26.

Samhatatvat yatha Venumividah kantakairvytah

na sakyate samucchettum bhratreanghatavanstatha.

Pafic., III, 60. Sanghatavan yatha vequrnivido vequbhirvrtah na sakyate samucchettum durbalopi tatha urpah.

Kamandakiya, IX, 46.

Sanghatavan yatha venumividaih kantakair vrtah na sakyate samuochettum bhratreanghatavanstatha.

All MSS, of the Sukrantti read Vepus sanghdtardustathd.

¹²² See Hitop., IV, 27; Pañcatantra, III, 22; Kamandakiya, III, 46.

- 187. Baltyasi praņamatām kāle vikramatām api sampado na visarpanti pratīpam iva nimnagāḥ.
- 188. Rājā na gacchet visvāsam sandhito' pi hi buddhimān adrohasamayam kṛtvā vṛtram indrah purā'vadhīt.¹⁵⁵
- Āpanno' bhyudnyākānkṣī pīdyamānah parena vā dešakālabalopetah prārabheta ca vigraham.
- Prahīnabalamitram tu durgastham hyantarāgatam atyantavisayāsaktam prajādravyāpahārakam; bhinnamantribalam rājā pīdayet parivestayan.
- 191. Vigrahah sa ca vijñeyo hyanyasca kalahah smrtah.
- Balīyasātyalpabalah śūreņa na ca vigraham kuryāt ca vigrahe pumsām sarvanāšah prajāyate.

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- 187 The power of those kings, who bow to a strong enemy, but fight at another time, does not glide away, as rivers do not flow against the stream.
- 188. A wise king does not enter into confidence even if he bas made an alliance; Indra after having made friendship killed in ancient times Vrtra.
- 189. When unfortunate, or hoping for success, or troubled by an enemy, one should commence war only, after having obtained the (right) place, time and army.
- 190. A king should beleaguer and oppress an enemy who is deficient in army and in friends, who stays in his fortress, who has invaded his country, who is much addicted to women, who robs his subjects of their money, and whose ministers and army are disaffected.
- 191. This is regarded as war, but a quarrel is regarded as a different thing.
- 192. A very weak one should not go to war with a strong enemy, for in such a combat of men occurs general destruction.

¹⁸³ See Palle., III. 7; Kamard., IX. 50 to sloka 187; and Kamand., IX. 52 to sloka 188.

- Ekārthābhinivesitvam kāranam kalahasya vā upāyāntaranāše tu tato vigraham ācaret,
- Vigrhya sandhāya tathā sambhūyātha prasangatah upeksaya ca nipunairyanam pañcavidham smrtam.154

 Vigrhya yati hi yada sarvan satruganan balat vigrhya yanam yanajñaih tadācāryaih pracaksyate. 155

196. Arimitrāni sarvāni svamitraih sarvato balāt vigrhya caribhirgantum vigrhyagamanam tu va.156

 Sandhāyānyatra yātrāyām pārsnigrāhena šatrunā sandhāyagamanam proktam tajjigīsoh phalārthinah.157

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193. If the cause of the quarrel is the desire to have one and the same object, one may proceed to war, if no other means exists (to settle the matter).

194. Five different modes of marching are mentioned by experts, Marching. a successful war march, an alliance march, a junction march, likewise an incidental march, and a contemptuous march.

195. If by his strength all hostile troops are conquered, it is called by the masters who know the marching rules, a successful war march.

196. If, when marching against one's own enemies, all the friends of the enemy are everywhere conquered through the ability of one's own friends, this is also called a successful war expedition.

197. When, while marching against one enemy, an alliance is made with another enemy, who is coming in his rear, this is called the alliance march of the king desirous 811000888.

¹⁸⁴ See Kamand., XI, 2, instead of speakant on upeksa ceti.

¹⁵⁵ See Kamand., XI, 3.

¹⁵⁶ See Kamand., XI, 4, instead of gri arer, and instead of edribhirgantum " cabhigamanam."

¹⁸¹ See Kamand., XI, 5.

- 198. Eko bhūpo yadaikatra sāmantaih sāmparāyikaih saktisauryayutairyānam sambhūyagamanam hi tat.¹⁵
- 199. Anyatra prasthitah sangāt anyatraiva ca gacchati prasangayānamtat proktam yānavidbhiśca mantribhih.¹⁵⁹

- Ripum yātasya balinah samprāpya vikṛtam phalam upekṣya tasmin tadyānam upekṣāyānam uoyate.
- Durvṛtte' pyakulīne tu balam dātari rajyate hrstam kṛtvā svīyabalam paritosyapradānataḥ.

- 198. If a king marches against an enemy together with his warlike, powerful and valiant neighbours, that is called going together.
- 199. If, after having set out against one enemy, he marches by circumstances (compelled) against another enemy, this is called by those who understand marching and by ministers, an incidental march.
- 200. If, when a strong king marches against an (insignificant) enemy, an advantage not worth having has been obtained and this has been given up, this is called a march conducted with contempt.
- 201. An army is even attached to a bad and low born king if Liberality he is only liberal, having pleased his own army by troops. gifts of presents.

¹⁴⁰ Compare Kāmandaktya, XI, 6. Ektibhuya yadaikatra samantaih samparayikaih gaktidaucayutairyanam sambhuyagamanam hi iat.

¹⁴⁰ Compare Kamandakiya, XI, 9. Anyatra prasthitah sangat anyatraiva ca gacchati prasangayanam tat proktam atra falyo nidarfanam.

¹⁶⁰ Compare Kamandakiya, XI, 10. Ripum yatusya balinah samprapyaviskrtam phalam upeksya tanmitrayanam upeksayanam ucyate.

- -202. Nāyakaḥ purato yāyāt pravīrapuruṣāvṛtah 100 madhye kalatram kosasca svāmī phalguca yaddhanam, 161 dhvajinīm ca sadodyuktaḥ sa gopayet divānisam. 162
- 203. Nadyadrivanadurgeşu yatra yatra bhayam bhavet senāpatih tatra tatra gacchet vyūhīkṛtairbalaih.¹⁶³
- Yayat vyuhena mahata makarena purobhaye;
 éyenenobhayapakana süeya va dhiravaktraya.
- 205. Paścādbhaye tu šakatam pārēvayorvajrasañjñikam sarvataḥ sarvatobhadram cakram vyālam athāpi vā; 165 yathādeśam kalpayet vā śatrusenāvibhodakam.
- 206. Vyüharacanasanketän vädyabhäsäsamiritän

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- 202. The commander-in-chief should go in front, surrounded by valiant men, in the midst should be the queen, the treasury, the king, and whatever ready money there is; and he should always zealously guard his army day and night.
- 203 Wherever, whether in a river, mountain, forest or fortress an alarm of the enemy (coming) arises, there should the general go with combined forces.
- 204. If the alarm arises in front, he should march in an array Different resembling a crocodile, a double-winged hawk or a formations needle with a strong point.
- 205. A king should form if the alarm rises in the rear what is called a cart, if on the flanks a thunderbolt, if on all sides, an everywhere impregnable figure, a wheel and an elephant for the destruction of the hostile army according to the fitness of the place.
- 206. No body except his own soldiers should know the intima- Signals.

madhye kalatram svämi ca košah phalgu mahaddhanam.

¹⁶¹ See Hit., III, 70; Kamand., XVIII, 45.
Nayakah purato yayat praviraprtanavrtah

¹⁷ See Kamandaktya, XVIII, 43.

¹⁶⁵ See Kamand., XVIII, 44; Hitop., VII, 69; and compare Manu, VII, 188.

¹⁶⁴ See Kamand., XVIII, 48. 165 See Kamand., XVIII, 49.

Paścadbhaye tu śakatam parśvayorvajmanijāitam sarvatah sarvatobhadram bhayavyuham prakalpayet.

- svasainikairvinā kopi na jānāti tathāvidhān, niyojayet ca matimān vyūhān nānāvidhān sadā.
- Aévānām ca gajānām ca padātīnām pṛthak pṛthak uccaih samárāvayet vyūhasanketān sainikān nṛpaḥ.
- Vāmadakṣiṇasamstho vā madhyastho vāgrasamsthitaḥ śrutvā tān sainikaih kārvam anuśistam yathā tathā.
- Sammilanam prasaraņam paribhramaņam eva ca ākuncanam tathā yānam prayāņam apayānakam;
- Paryāyeņa ca sāmmukhyam samutthānam ca luņṭhanam
- samsthānam cāṣṭadalavat cakravat golatulyakam;
- Sücitulyam śakaţavat ardhacandrasamam tu vă pṛthagbhavanam alpālpaiḥ paryāyaiḥ paṅktiveśanam;
- Šastrāstrayordhāraņam ca sandhānam laksyabhedanam moksaņam ca tathāstrāņām śastrāņām parighātanam.

tions for the arrangement of troops, communicated by words or signals; and a wise man should always prescribe different formations.

- 207. A king should make his soldiers hear distinctly the formation-signals for the elephants, horses and foot-soldiers each separately;
- 208. whether he stands on the left or right, in the midst or is placed in front; the soldiers, when they hear these signals, should do according as they are taught.
- They should concentrate, spread; wheel round, fall in, Manmarch, double and retreat;
- 210. now face or rise and lie down on the ground, or stand like an octagon, like a wheel, like a ball;
- like a needle, like a car, or like the halfmoon, skirmish in small numbers, form rows in regular order;
- 212. take up weapons and arms, aim at and hit the mark, discharge missiles and strike with weapons,

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Drak sandhanam punah pato graho moksah punah punah;

svagūhanam pratīghātah šastrāstrapadavikramaih.

214. Dvåbhyam tribhiseaturbhirva panktise gamanam tatah ; tatha pragbhavanam capasaranam tupasarjanam apasṛtyastrasiddhyartham upasṛtya vimokṣaṇam.

 Prägbhutvä mocayet astram vyühasthah sainikah sada äsinah syät vimuktästrah prägvä cäpasaret punah.

 Prāgāsīnam tūpasrto dretvā svāstram vimocayet ekaikašo dvišo vāpi sanghašo bodhito yathā.

 Krauňcanam khe gatiryadrk panktitah samprajayate tädrk samraksayet krauňcavyúham dešabalam yatha,

218. Sükşmagrivam madhyapucoham sthülapakşam tu panktitah brhatpakşam madhyagalapucoham syenam mukhe

tanum.

- 213. then quickly aim again, and throw, take up and discharge the arms repeatedly, cover themselves, and beat with arms, weapons and feet;
- 214. further go in rows of two, three or four; likewise, front, retire and change places; retire for adjusting the arms and advance for the discharge.
- 215. A soldier when standing in his corps should always discharge his arms from the front, if he has discharged the arms he should sit down, or should leave the front.
- 216. But (the next soldier) advancing should discharge his weapon keeping his eye on him who sits in front, either one by one, or in twos or in numbers, according to the order.
- 217. As the moving of the herons proceeds in the sky, he should Formation arrange the herons' array, according as it is adapted to of troops. the country;
- 218. with a thin neck, a middling tail, a bulky wing, arranged

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- Catuspād makaro dirghasthūlavakro dvirosthakah sūcī sūksmamukho dirghasamadandāntarandhrayuk.
- Cakravyuhah eaikamärgo hyastadhä kundalikrtah caturdiksvastaparidhih sarvatobhadrasañjñikah.

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- Amārgaścāṣṭavalayī golakaḥ sarvatomukhaḥ śakataḥ śakatākāro vyālo vyālākṛtiḥ sadā.
- Sainyam alpam brhadvāpi dretvā mārgam raņasthalam vyūhairvyūhena vyūhābhyām sankarenāpi kalpayet.
- Yantrāstraih śatrusenāyā bhedo yebhyah prajāyste, sthalebhyastesu santisthet sasaīnyo hyāsanam hi tat.
- Tṛṇānnajalasambhārā ye cānye satrupoṣakāḥ saṃyak nirudhya tān yatnāt paritasciram āsanāt.

in rows, (and) a hawk-array with a broad wing, a middling throat and tail and thin at the face.

219. The crocodile has four feet, a long and broad snout and two lips. A needle has a thin face, a long and even stick-like body, and a hole at its end.

220. The wheel array has one way, but eight coils. A figure with eight rings and with four faces is called a Sarvate-bhadra (a strong one on every direction).

221. A ball has no entrance, eight circles and everywhere a face; a cart is like a cart and an elephant has always the shape of an elephant.

223. Having seen the army, the road, the battlefield, whether small or big, he should arrange his army in many corps, or in one or two, or in one mass.

223. Where a gap may be made in the hostile army through Post. missiles and machines, in these places the king should stand with his army; this is called post.

224. Having with great exertion effectually removed from his post all round and for a long time to come grass, food, water and other provisions, which maintain the enemy;

- 225. Vicchinnavividhāsāram prakṣīṇayavasaindhanam, vigṛhyamāṇaprakṛtim kālenaiva vašam nayet. 166
 226. Areśca vijigīṣośca vigrahe hiyamāṇayoḥ sandhāya yadavasthāṇam sandhāyāsanam ucyate. 167
 227. Ucchidyamāno balinā nirupāyapratikriyaḥ, kulodbhavam satyam āṣrayam āṣrayeta balotkaṭam.
 228. Vijigīṣostu sāhyārthāḥ suhṛtsambandhibāndhavāḥ pradattabhṛtikā hyanye bhūpā amṣaprakalpitāḥ.
 229. Saivāṣrayastu kathito durgāṇi ca mahātmabhiḥ.
 230. Aniścitopāyakāryaḥ samayānuoaro nṛpaḥ dvaidhībābāvena varteta kākāksivat alaksitam. 168
- 225. he should subdue in time the enemy, whose various provisions are scattered, whose corn and fuel is destroyed and whose subjects are incensed.

pradaršayet anyakāryam anyam ālambayet ca vā.

- 226. If the enemy and the king who wishes to conquer are reduced in the war, the place where they stand, when they make peace, is called the place produced by peace.
- 227. If a king who has no means of redress is much oppressed Refuge. by a strong king he should take refuge with a king, who is well-born, righteous, venerable and of superior strength.
- 228. A king (who wishes to conquer) has friends, connections and relations who assist for the sake of friendship, others who have received pay, and kings on whom is settled a part (of the enemy's country).
- By great-minded men this is surely called refuge and a fortress is also called a refuge.
- 230. A king, whose arrangements are not certain, looking out Duplicity. for the opportune time, should practise duplicity like the concealed eye of a crow, he should pretend one thing and seize another.

¹⁶⁶ See Kamand., XI, 16. 167 See Kamand., XI, 17. 168 See Kamand., XI, 24b.

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- Sadupāyaiśca sanmantraih kāryasiddhirathodyamaih bhavet alpajanasyāpi kim punarnṛpaterna hi.
- 232. Udyogenaiva siddhyanti kāryāņi na manorathaih.
- Na hi suptamṛgendrasya nipatanti gajā mukhe¹⁶⁹;
 ayo'bhedyam upāyena drayatām upanīyate.¹⁷⁰
- Lokaprasiddham evaitat väri vahnerniyämakam upäyopagrhitena tenaitat parisosyate.
- Upāyena padam mūrdhni nyasyate mattahastinām¹⁷² upāyesūttamo bhedah sadguņesu samāšrayah.
- Kāryau dvau sarvadā tau tu nṛpeṇa vijigīṣuṇā, tābhyām vinā naiva kuryāt yuddham rājā kadācana.
- 231. The success of the undertaking of even an insignificant man may be ensured by clever stratagems, good councils and efforts, would this not be surely the case with a king?

Undertakings really succeed by efforts alone and not by Necessity
wishes.

233. Elephants certainly do not fall into the mouth of the selfsleeping lion. The iron which cannot be broken is brought by expedients to fluidity.

234. That the water is the subduer of the fire is surely well known in the world, but it is dried up by that fire if assisted by proper means.

235. The foot is placed on the wild elephant by stratagem. Among all expedients the division of friends is the best; amongst the six principles of policy the refuge is the best.

236. These two ought always to be used by a king who wishes to conquer; without these two no king could ever undertake a war.

¹⁸⁰ See Hitop., 1, 35b.

na hi suptasya simhasya pravisanti mukhe mrgah.

¹⁷⁰ See Kamand., XI, 47b.

¹⁷¹ See Kamand., XI, 49. tenaira instead of tenaitat.

¹⁷¹ See Kamand., XI, 46b.

- Parasparam pratikulyam ripusenapamantrinam, bhavet yatha tatha kuryat tat prajayasca tat striyah.
- Upāyān sadguņān viksya satroh svasyāpi sarvadā, yuddham prāņātyaye kuryāt sarvasvaharaņe sati.
- 475

- Strīviprābhyupapattau ca govināsepi brāhmaņaih, prāpte yuddhe kvacinnaiva bhavet api parāmukhah.
- 240. Yuddham utsrjya yo yati sa devairhanyate bhréam.
- Samottamādhamai rājā tvāhūtah pālayan prajāh, na nivarteta sangrāmāt kṣatradharmam anusmaran.
- Rājānam cāpayoddhāram brāhmaņam cāpravāsinam, nirgilati bhūmiretau sarpo vilašayān iva.¹⁷⁴
- 237. He should contrive so that there is mutual enmity among General the ministers and generals of the enemy and also among political the subjects and women.
- 238. In case his life is in danger, or all his property is to be taken, he should fight having always considered the six-fold expedients of his enemy and of himself.
- 239. If he has undertaken the war for the defence of women and Brahmans and on account of the destruction of cows even if done by Brahmans, he should never turn away.
- 240. Who goes away having left the fight is quickly destroyed by the gods.
- 241. A king who protects his subjects if he is summoned to fight by equal, superior, or inferior enemies should not turn from the contest remembering the duty of a Ksatriya.
- 242. A king who does not fight and a Brahman who does not travel about; these two swallows the earth, like a snake does the animals living in holes.

¹⁷⁵ See Manu, VII. 87.

¹⁷⁴ See Mahabharata, Rajadharma, LVII, 1, and the observations on this sloka on pp. 38 and 39.

 Brāhmaņasyāpi cāpattau kṣatradharmeṇa vartataḥ, praśastam jīvitam loke kṣatram hi brahmasambhavam-

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- Adharmah ksatriyasyaisa yacchayyamaranam bhavet, visrjan slesmapittäni kṛpaṇam paridevayan.
- Avikşatena dehena pralayam yo' dhigacchati kşatriyo näsya tat karma prasamsanti puravidah.

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- 246. Na gṛhe maraṇam śastam kṣatriyāṇām vinā raṇāt, śauṇḍīrāṇām aśauṇḍīram adharmam kṛpaṇam hi yat.¹⁷⁷
- Raņesu kadanam kṛtvā jñātibhiḥ parivāritaḥ sastrāstraiḥ suvinirbhinnaḥ kṣatriyo vadham arhati.
- 243. Even for a Brahman who lives during misfortune according Prescriptions for to the Kşatriya rule, it is in the world a laudable Kşatriyas. living, for a Kşatriya is sprung from Brahma.

244. There would be a demerit to a Ksatriya whose death would be on a couch, emitting phlegm and bile and wailing piteously.

245. Those persons who are acquainted with the past do not praise the death of that Ksatriya who meets his dissolution with unwounded body

246. The death of Kṣatriyas in a house without a combat is not praised; it would be despicable, unrighteous, and miserable.

247. A Kṣatriya has earned (a noble) death, when, surrounded by his relations, he has made a slaughter (of enemies) on the battle fields, and is well pierced with arms and missiles.

178 Soe Mahabharata, Santiparva, Rajadharma, XOVII, 24.

¹¹⁶ See Mahabharata, Santiparva, Rajadharma, XCVII, 23.

¹¹⁷ See ibidem, 25; instead of fastam tata, and instead of rind rendt praises-

yate.

118 Ses thidem, 28; but the second half of the sloka differs, for instead of it
we read filepath isstrairabhiklistak katriya mripum arkati. The
change in the reading filepath-instraih for instrustraih is significant.

- 248. Āhaveşu mitho'nyonyam jighāmsanto mahīkṣitaḥ yudhyamānāḥ param šaktyā svargam yāntyaparānmukhāḥ,¹⁷⁹
- Bharturartheca yah sūro vikramet vāhinīmukhe bhayāt na nivarteta tasya svargo hyanantakah.
- 250. Ähave nihatam süram na soceta kadācana 180 nirmuktah sarvapāpebhyah pūto yāti salokatām.
- Varāpsarassahasrāni sūram āyodhane hatam tvaramānāh pradhāvanti hyayam mama bhavet iti.
- Munibhirdīrghatapasā prāpyate yat padam mahat yuddhābhimukhanihataih sūraih tat drāk avāpyate.
- 253. Etat tapaśca punyam ca dharmaścaiva sanātanah catvāra āśramāstasya yo yuddhe na paiāyate. 182
- 248. The rulers of the earth, who, wishing to kill each other in battles, are fighting with utmost strength, go to heaven with not averted heads.
- 249. That here who fights for the sake of his king in front of the army, nor turns away from fear, is sure of the everlasting heaven.
- 250. One should never bewail a hero who is killed in battle, freed from all sins he goes purified to the world specially assigned to him.
- 251. Towards a hero who is killed in battle run thousands of the best Apsaras, saying: "this one should be mine."
- 252. That grand step which after long penance is obtained by sages, is quickly won by heroes, who are killed with their faces turned towards the contest.
- 253. He who does not run away in the battle, earns this penance, this merit, this primeval virtue and the four stages.

¹⁷⁹ See Manu, VII, 89; and Nitiprakatika, VII, 44.

¹⁰⁰ Compare Mahabharata, Rajadharma, XCVIII, 43b.

³¹ See Parásarasmyti, IV, 37; and Mahabharata, ibidem, XCVIII, 45b and 46a; the latter half sloks runs there thus: tvaramapabhidhavanti mama bharta bhave it and the sloke runs there is a sloke runs there is a sloke runs.

See Mahabharata, ibidem XCVIII, 46b and 47a.

- 254. Na hi sauryāt param kiñcit trişu lokeşu vidyate sūraḥ sarvam pālayati sure sarvam pratisthitam.¹⁸³
- 255. Carāṇām acarā annam adamṣṭrā damṣṭriṇām api apāṇayaḥ pāṇimatām annam śūrasya kātarāḥ.¹⁸⁴
- 256. Dvāvimau purusau loke sūryamaņdalabhedinau parivrāt yogayuktasea raņe cābhimukho hataḥ.¹⁴⁵
- Ātmānam gopayet šakto vadhenāpyātatāyinah, suvidyabrāhmanaguroryuddhe śrutinidarśanāt.
- Ātatāyitvam āpanno brāhmaņah śūdravat smṛtaḥ nātatāyivadhe doşo hanturbhavati kaścana.

- 254. In the three worlds there is nothing known better than heroism, the hero protects all, in a hero all is fixed.
- 255. The food of moving beings is the immoveable, of those who have fangs those that have no fangs of those who have hands those who have no hands; the food of the hero is the coward.
- 256. These two persons in the world have penetrated to the sphere of the sun, the devotee who is immersed in deep meditation, and he who is killed, whilst turned to the battle.
- 257. A strong man may according to the order of the Veda When a protect himself in the battle by slaying a preceptor, marder who is a learned Brahman, if he attempts his life.
- 258. A Brahman who has committed a murder is regarded as a Sūdra; for the murder of an assassin no fault whatever is to be found with the person who kills him.

¹⁵³ See Mahabharata, ibidem, XCIX, 18.

¹⁸⁴ See Mahabharata, ibidem, XCIX, 15.

Caranam acara hyannam adametra dametrinam api apah pipasatam annam annam atrasya katarah.

¹⁴⁴ See Parasarasmrti, IV, 32.

¹⁸⁶ Compare Manu, VIII, 351a,

- Udyamya sastram ayantam bhrunam apyatatayinam nihatya bhrunaha na syat ahatva bhrunaha bhavet.
- Apasarati yo yuddhat jivitarthi naradhamah jivan eva mrtah sopi bhunkte raştrakrtam tvagham.
- 261. Mitram vä sväminam tyaktvä nirgaochati ranāt ca yah so'nte narakam āpnoti sa jīvan nindyate'khilaih.
- Mitram apadgatam dṛṣṭvā sahāyam na karoti yaḥ akirtim labhate so'tra mrto narakam rechati.¹⁸⁸
- 263. Visrambhāt śaraṇam prāptam śaktaḥ tyajati durmatiḥ sa yāti narake ghore yāvat indrāścaturdaśa.

- 259. He who has raised a weapon against an approaching assassin, though this be a Vaidika Brahman, (and) killed him, should not be considered as a Vaidikabrahmanmurderer; if he has not killed him, he should be regarded as such.
- 260. He who desirous of his life goes away from the battle is a Punishvery bad man, though alive he is surely dead; he has ment of cowardice. to bear the sin done in the realm.
- 261. He who, having left his friend or his king, goes from the battle field, goes at his death to hell, and is blamed by all during his life.
- 262. He who, having seen his enemy going into danger, does not help him, acquires infamy here and goes, when dead, to hell.
- 263. The wicked, who though strong, deserts him who confidingly comes to him for protection, stays in a fearful hell, as long as there are fourteen Indras.

¹⁰⁷ See Mahabharata, Santiparva, Rajadharma, LVI, 28-30, and p. 38. Compare Manu, VIII, 350.

Gurum va balavrddhau va brahmanam va bahuarutam atatayinam ayantam hanyat eva vicarayan;

and about baranaka Manu, VIII, 317.

¹⁰⁰ Compare with this and the preceding Slokas the Mahabharata as above, 20-21.

- Sudurvettam yadā kṣatram nāšayeyustu brāhmaņāḥ yuddham kṛtvāpi šastrāstrairna tadā pāpabhāginaḥ.
- 265. Hinam yadā kastrakulam nicairlokah prapidyate tadāpi brāhmanā yuddhe nāsayeyuh tu tān dhruvam.
- 266. Uttamam mäntrikästrena nälikästrena madhyamam sastraih kanistham yuddham tu bähuyuddham tato'dha-
- Mantreritamahāśaktibāņādyaiḥ śatrunāśanam mantrikāstreņatat yuddham sarvayuddhottamam smṛtam
- Nälägnicürnasamyogat lakse golanipatanam nälikästrena tat yuddham mahahrasakaram ripoh.
- Kuntādiśastrasanghātairnāśanam ripūņām ca yat śastrayuddham tu tat jñeyam nālāstrābhāvatah sadā.
- Karsanaih sandhimarmanam pratilomanulomatah bandhanairghatanam satroryuktya tat bahuyuddhakam.
- 264. If the Brahmans should even with arms and missiles destroy in a war bad behaving Kşatriyas, they do then commit no sin.
- 265. If, when the Kṣatriya caste is weak, the world is oppressed by mean persons, then also should the Brahmans surely destroy those in war.
- 266. The best fight is with enchanted missiles, the middling is Modes of with tubular projectile weapons, the lowest with Fighting weapons, the worst is fighting with the arms.
- 267. The destruction of enemies by arrows and other weapons of great force and despatched by spells, and by enchanted missiles, is recorded as the best fighting of all.
- 268. The throwing of a ball by a tubular instrument through the application of gunpowder and a tube is very destructive to the enemy.
- 269. The destruction of the enemy which takes place by means of lances and other weapons, is always to be known as the combat with weapons in the absence of tubular projectile weapons.
- 270. The killing of the enemy by injuring his joints and vital

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- 271. Nālāstrāņi puraskṛtya laghūni ca mahānti ca tat prothagāñēca pādātān gajāsvān parsvayoh sthitān kṛtvā yuddham prārabheta bhinnamātyabalārinā.
- Sāmmukhyena prapātena pārāvābhyām apayānatah yuddhānukulabhumestu yāvallābhastathāvidham.
- 273. Sainyārdhāmsena prathamam senapairyuddham īritam amātyagopitaih pascāt amātyaih saha tat bhavet, nṛpasaigopitaih pascāt svatah prānātyaye ca tat.
- Dîrghadhvaniparisrantam kşutpipasahitasramam¹⁰⁰ vyadhidurbhikşamaranaih piditam dasyuvidrutam;

parts, by tossing him backwards and forwards, and by grasping him, is properly regarded as the fighting with the arms of the body.

- 271. Having placed the small and big guns in front; and behind them the infantry, and on the two flanks the elephants and horses, he should begin the battle, when the hostile army and ministers are disunited,
- 272. by attacking the enemy in front, by falling on him with the two wings, by retreating, in such a manner so far as the advantage of the ground favours the combat.
- 273. The battle should be first opened by generals with half the army, it should then be continued by the ministers with the troops under their command, and at last by the king himself with the troops under his special orders, when life at large is at stake.
- 274. If his own army is exhausted by a long march, experiences distress through hunger and thirst, is destroyed by disease, famine and death, is alarmed by marauders;

¹⁰⁰ See Hitop., III, 108a.

Dirghavartmaparisrantam nadyadrivanasankulam.

¹⁸⁰ See Kamand., XVIII, 50.

Dirghe'dhvani parisrantam kşutpipasahimaklamam vyadhidurbhikşamarakaih pidanam dasyuvidrutam.

Hitop., III, 199a. Pramattam bhojanavyagram vyadhidurbhikaapiditam

 Pankapārisujalaskandhavyastam śvāsāturam tathā prasuptam bhojane vyagram abhūmistham asamathitam :191

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 Ghoragnibhayavitrastam vṛṣṭivātasamāhatam, evamādisu jātisu vyasanesu samākulam svasainyam sādhu rakset tu, parasainyam vināšayet.193

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 Upāyān sadgunān mantram šatroh svasyāpi cintayan dharmayuddhaih kütayuddhairhanyat eva ripum sada.

 Yane sapadabhrtya tu svabhrtyan vardhayan nrpah svadeham gopayan yuddhe carmana kavacena ca ;

275. is troubled on the roads by much mud, dust and water, is also out of breath, is sleepy, is engaged in eating, has no proper place to stand upon, is in disorder;

276. is frightened by the fear of horrible fires, is heavily exposed to wind and rain, and is distressed by such existing calamities, he should well guard it; but he should destroy the army of his enemy, if it is in a similar state.

277. Considering the six-fold expedients and the design of his enemy and his own, he should surely always kill his enemy by fair and unfair fighting.

278. When the king gladdens his soldiers on the march with a quarter extra pay, protects his body in the battle with a shield and armour;

¹⁰¹ See Kamandakiya, XVIII, 51b and 52s.

Pankapamaujalaklinnam vyastam punjikṛtam pathi presuptem bhojanavyagram abhūmistham asanisthitam.

Hitop., III, 109.

Pramattam bhojanavyagram vyadhidurbhikantditam asamsthitam abhuyistham vṛṣṭivatasamakuļam.

¹⁹⁵ See Hitop., III, 103b. Ghoragnibhayasantrastam kşutpipasarditam tatha, and Kamandaktya, XVIII, 52b, Cauraguibhayavitrastam vrstivatasamahitam.

¹⁸⁰ See Kamandaktya, XVIII, 53. synsainyam sadhu rakasta parasainyam ca ghatayat.

 Pāyayitvā madam samyak sainikān śauryavarddhanam nalāstreņa ca khadgādyaih sainiko ghātayet arim.

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- Kuntena sādī bāņena rathago gajago'pi ca gajo gajena yātavyaḥ turagena turangamaḥ.
- Rathena ca ratho yojyah pattina pattir eva ca ekenaikasca sastrena sastram astrena västrakam.

- 282. Na ca hanyāt sthalārūdham na klībam na kṛtāājalim na muktakcéam āsīnam na tavāsmīti vādinam.¹⁹⁴
- 283. Na suptam na visannāham na nagnam na nirāyudham na yudhyamānam pasyantam, yudhyamānam parena ca. 185
- 279. has made his soldiers drink up to a state of intoxication the strengthener of bravery—; the soldier kills his enemy with a tubular instrument (gun), swords and other weapons.
- 280. A charioteer should be assailed by a lance, a person on a carriage or elephant by an arrow, an elephant by an elephant, a horse by a horse.
- 281. A carriage is to be opposed by a carriage, and a foot-soldier certainly by a foot-soldier, one person by another person, a weapon by a weapon, or a missile by a missile.
- 282. He should not kill a person, who is alighted on the ground, Who nor one who is emasculated, nor one who has joined he killed his hands as a supplicant, nor one who sits with dishevelled hair, nor one, who says, "I am thine;"
- 283. nor one who is asleep, nor one without a coat of mail, nor a naked, nor an unarmed person, nor a combatant who is looking on, nor one who is fighting with another;

¹³⁴ See Manu, VII, 91; Nitiprakatika, VII, 46; and Mahabharata, Rajadharma, XCVI, 3, and XCVIII, 48a.

³⁸⁰ See Manu, VII, 92. na yudhyamanam pasyantam na parena samagatam; and Nitiprakasika, VII, 47.

OF THE ANCIENT MINDOS.	
284. Pibantam na ca bhuñjānam anyakāryākulam na ca na bhītam na parāvṛttam satām dharmam anusmaran. ¹⁹⁴	570
285. Vrddho balo na hantavyo naiva stri kevalo nṛpah, yathāyogyam tu santyojya nighnan dharmo na hiyate. 286. Dharmayuddhe tu kūte vai na santi niyamā amī na yuddham kūtasadršam nāšanam balavadripoh. 287. Rāmakṛṣṇendrādidevaih kūtam evādṛtam purā ; kūtenā nihato Bālir Yavano Namucih tathā. 288. Praphullavadanenaiva tathā komalayā girā kṣuradhāreṇa manasā ripoh chidram sulakṣayet. 289. Pañcāšītišatānīkah senākāryam vicintayan sadaiva vyūhasanketavādyašabdāntavartinah sañcareyuh sainikāšca rājarāṣṭrahitaiṣiṇah.	575 590
 284. nor one who is drinking or eating, nor one engaged in another matter, nor one who is frightened, nor one who is running away; remembering the custom of the good. 285. Neither is an old man or a child to be killed, surely not a woman and especially not a king. If one kills, having fought in a suitable manner, no virtue is violated. 286. These restrictions exist in fair but not in unfair fighting, 	

for the destruction of a powerful enemy there is no fighting like unfair fighting.

287. Unfair fighting was certainly observed by Rāma, Kṛṣṇa, Indra and other goda; Bāli, Yavana and also Namuci were killed by unfair fighting.

288. With a cheerful face certainly and with a pleasing voice, but with a mind sharp as a razor he should always keep in view the vulnerable point of the enemy.

289. A king with 8,500 soldiers should study the working of an Rules how to drill an army, and the soldiers should always march, being well army. acquainted with the words (of command), the bugle-calls, sounds, signs, and military arrays, wishing for the welfare of the king and kingdom.

- 290. Bheditām šatruņā dretvā svasenām ghātayet ca tām.
- Pratyagre karmani kṛte yodhairdadyāt dhanam ca tān pāritosyam vādhikāram kramato' rham nṛpaḥ sadā.
- Jalannatrnasarhrodhaih satrum sampīdya yatnatah purastāt visame dese pascāt hanyāt tu vegavān.
- 293. Kūṭasvarṇamahādānairbhedayitvā dvisadbalam nityavisrambhasainsuptam prajāgarakṛtaśramam, vilobhyāpi parānīkam apramatto vināśayet.
- Ksanam yuddhaya sajjeta ksanam capasaret punah akasmat nipatet durat dasyuvat paritah sada.
- 295. Rüpyam hemaca kupyam ca yo yat jayati tasya tat¹⁸⁷ dadyāt kāryānurūpam ca hrsto yodhān praharsayan.
- 290. A king having observed that his army has been won over by the enemy, he should destroy it.
- 291. A king should always, after a fresh victory has been won Rewards by his soldiers, give them a gratifying reward, and for soldiers. deserving promotion in due order.
- 292. Having at first harassed the enemy in a hilly country by Harassing cutting off water, food and grass, he should afterwards the enemy. vanquish him.
- 293. Having sown dissensions in the hostile army by great gifts of counterfeit gold, and having deceived the (remaining) inimical host, which is aleeping in complete security and tired out by watches, a vigilant king should destroy it.
- 294. At one moment he should endeavour to fight, at another moment he should retreat again, he should suddenly fall upon him from far, being always on every side, like a robber.
- 295. The silver, gold and copper, which a soldier wins, belong to Concernhim, and the king should eagerly, gratifying the warri- ing plunder, ors, bestow on them rewards according to merit.

296.	Vijitya ca ripun evam samādadyāt karam tathā	
	rājyāmšam vā sarvarājyam nandayeta tatah prajāh.	595
297.	Türvamangalaghosena svakiyam puram aviset	
	tatprajāh putravat sarvāh pālayetātmasātkṛtāḥ.	
298.	Nivojavet mantriganam sparam mantracintane	
200.	dese kāle ca pātre ca hyādimadhyāvasānatah	
	bhavet mantraphalam kidṛk upāyena katham tviti.	600
299.	Mantryadyadhikrtah karyam yuvarajaya bodhayet	
	paścat rajne tu taih sakam yuvarajo nivedayet.	
800.	Rājā samšāsayet ādau yuvarājam tatah tu sah	
0000	yuvarājo mantriganān rājāgre te'dhikārinah.	
301	Sadasatkarma rajanam bodhayet hi purohitah.	605

- 296. Having thus conquered his enemy he should take tribute, Tribute. a part of the kingdom or the whole kingdom and gladden afterwards his subjects.
- 297. He should enter his town amidst the propitious sound of musical instruments, and he should protect all the people confided to him like sons.
- 298. He should appoint one set of ministers (for administration); Administrative and another for the consideration of council, (to consider) and executing to place, time, and person, according to the cutive beginning, midst or end, what means should be adopted officers.
 and what would be the result of the policy.
- 299. The prime minister should inform the crown prince of the Privy state of affairs, (and) the crown prince should together with these (ministers) afterwards impart it to the king.
- 300. The king should at first issue instructions to the crown prince, the crown prince should then in the presence of the king give commands to the boards of ministers, and these to their officers.
- 301. The priest should truly teach the king right and wrong.

- Grāmāt bahih samīpe tu sainikān dhārayet sadā grāmyasainikayorna syāt uttamarnādharmarnatā.
- Sainikārtham tu paņyāni sainye sandhārayet pṛthak naikatra vāsayet sainyam vatsaram tu kadācana.
- Senāsahasram sajjam syāt kṣaṇāt samśāsayet tathā samśāsayet svaniyamān sainikān aṣṭame dine.

- Candatvam ātatāyitvam rājakārye vilambanam anistopekṣaṇam rājñah svadharmaparivarjanam,
- Tyajantu sainikā nityam samlāpam apicāparaih, nṛpājňayā vinā grāmam na viseyuh kadācana.

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- Svadhikariganasyapi hyaparadham disantu nah, mitrabhavena vartadhvam svamikarye sadakhilaih.
- 302. The king should always place the soldiers outside the Soldiers village but near; between villagers and soldiers there invillages. should be no relation of creditor and debtor.
- 303. He should open separately bazars in the camp for the Bazaar. sake of the soldiers, and he should never lot an army remain at one place a year.
- 304. A king should order that a troop of a thousand men be ready at a moment's notice, he should teach the soldiers his orders in eight days.
- 305. "Let the soldiers always avoid committing a rash act, a General murderous assault, delay in the service of the king, orders overlooking what is disagreeable to the king, and neglect in the performance of their duties;
- 306. "Let them avoid having conversations with strangers; nor should they enter a village without the permission of the king.
- 307. "Let them communicate to us any mistake made by an officer or a man belonging to the rank and file; and may you always be while in the service of the king in a state of fraeadship with all.

308. Sūjjvalānica rakṣantu šastrāstravasanāni ca annam jalam prasthamātram pātram bahvannasādhakam. 309. Šāsanāt anyathā cārān vinceyāmi yamālayam

 Säsanät anyathä caran vinceyami yamaisyam bhedäyitä ripudhanam grhitvä darsayantu mam.

 Sainikairabhyaset nityam vyühädyanukṛtim nṛpaḥ tathāyane'yane lakṣyam astrapātairbibhedayet.

 Sáyam pratah sainikanam kuryat sangananam nrpah jatyakrtivayodesagramavasan vimréya ca.

312. Kalam bhṛtyavadhim deyam dattam bhṛtyasya lekhayet kati dattam hi bhṛtyebhyo vetane paritoṣikam, tat praptipatram gṛhniyāt dadyāt vetanapatrakam.

 Sainikah siksita ye ye tesu purna bhrtih amrta yuhabhyase niyukta ye tesvardham bhrtim avahet.

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308. "Let them keep very clean the arms, projectile weapons and dress, the food, water, the vessel which holds a prasths-measure and in which much food can be prepared.

309. "I shall remove the soldiers who disobey these orders to the abode of Death. The soldiers disbanded for plunder should show me what booty they have taken from the

enemy."

310. A king should always practise with his soldiers the manner of formations, and other military drills, and should likewise try every half year to pierce the target by discharging projectile weapons.

311. A king should every evening and morning muster his Muster. soldiers, having enquired into their caste, physique,

age, country, village and station.

312. He should write down the time, the amount of pay, what Pay. pay has been given and is to be given, what present has been given to the soldier in his pay. He should take a receipt for it, and should give a pay-bill.

313. For the soldiers, who are disciplined, is mentioned full-pay; to those, who are undergoing instruction in military

formations he should give half-pay.

- 314. Asatkarträáritam sainyam näáayet satruyogatah.
- 315. Nrpasyāsadgunaratāh ke gunadvesino narāh asadgunodāsīnāh ke hanvāt tān vimršan nrpah, sukhāsaktān tyajet bhrtyān guninopi nrpah sadā.
- 316. Susvantalokaviávasta yojyah tvantahpuradisu dhāryāh susvāntavišvastā dhanādivyayakarmani.

- 317. Tatha hi lokaviávasto bahyakrtye niyujyate anyathā yojitāh te tu parivādāya kevalam.
- 318. Šatrusambandhino ve ve bhinnā mantriganādayah nrpadurgunato nityam hrtamanagunadikah, svakārvasādhakā ye tu subhrtyā posayet ca tān.

- 314. A king should destroy an army which is attached to an untrustworthy general, who is in collusion with the enemy.
- 315. A king, remembering those persons, who rejoice in his Treatment faults and hate his virtues, or who are indifferent to of serhis faults, should kill them; servants who are devoted to pleasure he should dismiss, even if they are otherwise good.
- 316. Well disposed and popular persons should be placed in Appointhis harem and elsewhere; well disposed and reliable ments how persons should be employed in the distribution of money, &c.

- 317. A person who has gained the confidence of the people should be likewise appointed to posts outside the palace, otherwise if incompetent persons were appointed, they would only bring on discredit.
- 318. He should support with good pay the group of ministers Creating and other officers, who will serve his interests, and who dissenwhile actually in the service of the enemy are dis-enemy's affected, and who have lost their pride, virtue, and camp. other good qualities through the badness of their king.

- 319. Lobhena'sevanat bhinnah tesvardham bhrtim avahet šatrutyaktān suguninah subhrtyā pālayet nrpah.
- 320. Pararaștre hrte dadyat bhrtim bhinnavadhim tatha dadyāt ardhām tasya putre striyai pādamitām kila.

- 321. Hrtarājyasya putrādau sadguņe pādasammitam dadyat va tadrajyatastu dvätrmáamásm prakalpayet.
- 322. Hṛtarājyasya nicitam kośam bhāgārtham āharet.
- 323. Kausidam va taddhanasya pürvoktärdham prakalpayet, taddhanam dvigunam yavat na tat türdhvam kada-CADA.
- Svamahatvadyotanärtham hrtarajyan pradhärayet praumanairyadi sadvettan durvettastu prapidayet.
- 319. The king should give half pay to those who are gone away (and have come back) from greed and disregard; he should provide excellent persons who have left the enemy, with good pay.

320. If the kingdom of an enemy has been taken, he should What to give him pay from the time of the deposition; half the give to amount he should give to the son, a quarter surely to quished the wife.

- 321. He should give to the son or other relation of a dethroned prince, if he is very good, a fourth part of the income from the kingdom, or he may assign to him the thirtysecond part of the kingdom.
- 322. He should take for his own share the amassed treasure of the dethroned prince.
- 323. Or he may fix on the dethroned prince the interest accruing from the treasure, i.e., the above mentioned portion (1), till the total sum (received by him) is double the amount of the treasure.
- 324. He should maintain well the dethroned princes for the glory of his own greatness, if they are good with the honors formerly enjoyed by them; but if bad, he should suppress them.

- 325. Aşţadhā daśadhā vāpi kuryāt dvādaśadhāpi vā yāmikārtham ahorātram yāmikān vīkṣya nānyathā.
- Ādau prakalpitān amšān bhajeyuryāmikāstathā ādyah punastvantimāmišam svapūrvāmišam tato'pare.
- Punarvā yojayet tadvat adye'ntyam cantime tatah svapūrvāmsam dvitīye'hni dvitīyādih kramāgatam.
- Caturbhyastvadhikān nityam yāmikān yojayet dine yugapad yojayet dṛṣṭvā bahūn vā kāryagauravam.
- 329. Caturūnān yāmikānstu kadā naiva niyojayet.
- Yadraksyam upadesyam yat adesyam yamikaya tat tatsamaksam hi sarvam syat yamiko'pica tat tatha.

- 325. For the sake of the watchmen he should divide night and Watchday into eight, ten or twelve watches, having previously looked at the (the number of the) watchmen, not otherwise.
- 326. The watchmen will also share (amongst them all) the originally fixed watches; the first watchman will again take the last watch, and each of the others will take the watch of his predecessor.
- 327. Or he may also appoint as before the last watchman to the first and last watch; the second watchman and the others should in due order obtain on the second day, &c. the watch of the first watchman.
- 328. He should always appoint every day more than four watchmen, or on some occasions having seen that the work is heavy, he should appoint many.
- 329. He should never appoint less than four watchmen.
- 330. The watchman should be told what is to be guarded, and what is to be communicated; all should be before his eyes, and the watchman should do it accordingly.

 Kīlakoşte tu svarņādi rakṣet niyamitāvadhi svāmśānte darśayet anyayāmikam tu yathārthakam.

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- 332. Kşane kşane yamikanam karyam dürat subodhanam.
- Satkṛtān niyamān sarvān yadā sampādayet nṛpaḥ tadaiva nṛpatiḥ pūjyo bhavet sarveşu nānyathā.
- Yasyāsti niyatam karma niyatah sadgraho yadi niyato'sadgrahatyāgo nṛpatvam so'énute ciram.

- Yasyāniyamitam karma sādhutvam vacanam tvapi sadaiva kutilah syāt tu svapadāt drāk vinasyati.
- 336. Napi vyaghragajah sakta mrgendram sasitum yatha na tatha mantrinah sarve nrpam svacchandagaminam.
- 331. He should up to the appointed time guard the gold and other things in the bolted treasury, (and) at the end of his watch he should show the amount of the treasure to another watchman.
- 332. There should be kept continually from a distance a good lookout on the watchmen.
- 333. If a king should succeed in having all his orders well Respect executed, he will surely be honoured among all men, by a king but not otherwise.
- 334. The king, who is steady at his work, shows kindness to good people and discountenances bad persons, enjoys his kingdom for a long time.
- 335. The king, who is unsteady in his work, good behaviour and speech, and who is always deceitful, disappears soon from his throne.
- 336. As tigers and elephants even are not able to govern the lion, thus also all ministers are not able to govern a king, who goes on as he likes.

 Nibhṛtā dhikṛtāstena nissāratvam hi teṣvataḥ gajo nibadhyate naiva tūlabhārasshasrakaiḥ.

338. Uddhartum drāk gajaḥ śaktaḥ paṅkalagnagajam balī, nitibhrastanṛpam tvanyanṛpa uddhāraṇakṣamaḥ.

 Balavannrpabhṛtye' lpe' pi śrih tejo yathā bhavet na tathā hīnanrpatau tanmantriṣvapi no tathā.

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 Bahünüm aikamatyam hi nṛpaterbalavattaram bahusūtrakrto rajjuh simhādyākarsaṇaksamaḥ.

 Hinarājyo ripublityo na sainyam dhārayet bahu, kośavrddhim sadā kuryāt svaputrādyabhivrddhaye.

342. Kşudhayā nidrayā sarvam asanam sayanam subham bhavet yathā tathā kuryāt anyathāsu daridrakṛt.

- 337. By the king are humbled and censured the ministers, among them is therefore surely weakness; an elephant is not bound even by 1,000 loads of cottor
- 338. A strong elephant is able to draw out quickly another elephant who sticks in the mud; a king is only able to reform an iniquitous king.
- 339. Even if the servants of a mighty king are insignificant there may be power and splendour; but it will not be the same with a weak king, even if his ministers are not so.
- 340. The unanimity of many makes a king very strong; a rope made of many strings is able to drag a lion and other beasts.
- 341. A king whose kingdom is reduced and who has become a A weak dependent of his enemy should not maintain a large kingdom army, he should always increase his treasure, for the strengthen recovery of power by his son and descendants.
- 342. He should so work that through hunger and alcopiness every kind of food and couch becomes agreeable, otherwise he will soon become poor.

- 343. Disānayā vyayam kuryāt nṛpo nityam na cānyathā.
- Dharmanitivihīnā ye durbalā api vai nṛpāḥ, sudharmabalayugrājāā daņdyāste cauravat sadā.
- 345. Sarvadharmāvanāt nīcanrpo'pi áresthatām iyāt uttamo'pi nrpo dharmanāšanāt nīcatām iyāt.

346. Dharmadharmapravittau tu nrpa eva hi karanam sa hi áresthatamo loke nrpatvam yah samannuyat.

- Manvadysiradrto yo'rthah tadartho Bhargavena vai, dvavimeatieatam aloka nitisare prakirtitali.
- 348. Šukroktanitisāram yaḥ cintayet anišam sadā vyavahāradhuram vodhum sa šakto nrpatirbhavet.
- 349. Na kaveh sadréi nitih trisu lokesu vidyate kavyaiva nitiranya tu kunitirvyavaharinam.
 - 343. A king should always spend in this manner, not otherwise.
 - 344. Those kings who are surely deficient in rightcousness and good behaviour, and are also weak, should be punished by a strong and rightcous king, like thieves.
 - 345. A lowbred king even may obtain excellence by the protection of righteousness, while a king of the highest caste may be ruined through the suppression of righteousness.
 - 346. A king is surely the cause for the prevalence of right and wrong; he who obtains kingship is surely the very best in the world.
 - 347. This matter concerning worldly prosperity which was respected by Manu and others was also surely respected by Bhargava; 2,200 double verses are told in his essence of polity.
 - 348. He who would always consider the essence of polity Excelspoken by Sukrs, may become a king capable of bear
 spoken by Sukrs, may become a king capable of bear
 ing the burden of administration.
 - 349. Such a polity as that of the Poet (Sukra) is not known in the three worlds. The Polity (propounded) by the Poet is (good) polity, any other polity among men is bad policy.

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 Näárayanti ca ye nītim mandabhāgyāstu te nṛpāḥ, kātaryāt dhanalobhāt vā syurvai narakabhājanāh.

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350. Those unfortunate princes, who out of cowardice or cupidity do not have recourse to this polity, will surely have their share in Hell.

SCHEME OF TRANSLITERATION.

			Consonants.					8.		Vowels.	Diphthongs.
Gutturals	 		k	kh	g	gh	ń	h	þ	a a	e ai
Palatala	 		o	ch	j	jh	ñ	у	4	i I	
Linguals	 		ţ	th	d	фh	ņ	r		r F	
Dentals	 		ŧ	th	d	dh	n	1		i	
Labials	 	••	P	ph	Ъ	bh	m	٧	þ	u ta	o au
						_	-				
Anusvāra	 		rh	(rec	ıñ)	m	(nex	re	eñ :	Avaeraha	

APPENDIX.

IDENTIFICATION OF THE MANIPURA OF THE MAHĀBHĀRATA WITH MANIPURA OR MANA-LŪRU OR MADURA IN SOUTH INDIA.

On a previous occasion (pp. 66 and 67) we mentioned the city of Manipura as a place to which the Mahabharata according to Mr. Talboys Wheeler ascribes fortifications provided with firearms.

This Manipura is declared by Mr. Wheeler to be the modern "Munnipur in the extreme east beyond the Bengal frontier...a seeluded valley lying between Eastern Bengal and Burmah; and the people appear to be a genuine relic of the ancient Nagas." 199

The late Professor Christian Lassen, by far the greatest authority on matters connected with Indian Archæology, inclines to place it on the Eastern Coast of India south of Chicacole at the mouth of the Längulya river, identifying it with a locality he calls Manphur-Bunder.²⁰⁰

In order to fix the locality of Manipura it is necessary to follow Arjuna on his journey as described in the first book of the Mahabharata.²⁰¹ Arjuna goes first to the North, reaches the Ganges, bathes in the holy river, and meets here the fair Ulupi, with whom he stays for some time. He visits all the holy places in Anga, Vanga, and Kalinga. Pursuing his road to the South along the Mahendra mountains, he crosses Kalinga, goes along the coast and reaches Manipura. Here

¹⁹⁹ See History of India, I, 144, 149, 421 and clauwhere.

²⁰⁰ See Indische Alterthumskunde, I, 676, 677, (603). 2nd Note "der Name scheint im Mauphur-Bunder, erhalten zu sein, welches bei Cikakul nahe bei Koringapatam liegt."

¹⁰⁰ See Mahabhanta, Adiparva, Chap. 174, 176; Bharatacampo, III. Stavaks; Oriental Hist. MSS Vol. I, 225, 226.

reigned the king Citravahana, who had an only daughter Citrangada. Arjuna demanded her in marriage, after having made himself known. The king did not object to this request, but demanded that, as Citrangada was his only child,—for no Raja of Manipura had ever had or would have more than one child,—the son born to Arjuna by his daughter should become king of Manipura. To this Arjuna consented and a son, Babhruvahana, was born to Citrangada, and after Arjuna had staid for three years in Manipura, he left it, turned towards the Western Coast, wandered along it to Gokarna, and finally met Kṛṣṇa at Dvaraka. In the horse sacrifice Arjuna came once more to Manipura, fought with, and was killed by, his son Babhruvahana, but was revived through the life-restoring jewel.

Deciding on the evidence before us as taken from the Mahabharata, Mr. Wheeler's identification of the ancient Manipura with the modern Munnipur falls to the ground, and with it all his explanations of the significance of this myth. That the stories concerning Arjuna's journey to Manipura should be known among the Munnipurees of our days, and that they should claim to be the descendants of the inhabitants of ancient Manipura's need not astonish anybody. By this time the contents of the Mahabharata are pretty well known all over India and its bordering states, and the Munnipurees do not stand alone in arrogating to themselves historical fame by taking advantage of the resemblance of names. There exist in India many places called Manipura.

Equally wrong, though less objectionable, is the conjecture of Lassen. There does not exist near Chicacole a place called Manphur-Bunder. The name of the town he thought of is not Manphur-Bunder, but Maffus-Bandar. It lies on the left bank of the Langulya river near the sea, and is a comparatively modern place, as its name, which is a mixture

³⁰⁰ See History of India, I. p. 149.

I believe that Professor Lassen was to a great extent induced to fix Manipura so far north, by limiting too much the extent of the Mahendra-mountain range, which he opined to be a particular mountain situated in Kalinga, and starting from these premises he went so far as to declare that the country Kalinga was wrongly mentioned in the Mahabharata, as the region which, together with Anga and Vanga, Arjuna has passed through on his journey. The name Mahendra can apply to all the mountains near the Eastern Coast, including the Eastern Ghats as well as the mountains near the sea of Bengal in the utmost south. Indra is the regent of the East, and the whole Eastern Coast is under his protection; a mountain near Rajamandry in the north is called Rajamahāndra and the highest and most southern mountain in India bears the name Mahendragiri.

In the Ramayana Hanuman is said to have jumped from

³⁴⁴ North of Vizisnagram lies inland a place called Munipuripeta.

the Mahendra mountain to Ceylon (Lanka). This exploit would have been somewhat more difficult if Hanuman had to jump from Mafusbandar to that island; as he would have been obliged to leap into the dark, for he could hardly see Ceylon from a place near Chicacole²⁰⁴.

The mountain from which Hanuman is said to have jumped to Ceylon, bears to this day the name *Mahendragiri*. It is the same hill, near which the fierce warrior sage Parasurama lived. This Mahendragiri is the highest and most prominent peak north of Cape Comorin. It is 5,430 feet high and serves the sailors as a land mark; on its southern side lies the town Pannagudi.

On the east of the south part of the Eastern Ghats, which is called there by the inhabitants also Mahendra, lies Madura, and a few miles still further east lies Manaluru. It may be here remarked, that Manaluru or Manipura lay formerly much nearer to the sea, as India has increased considerably on this side of the coast. In old legends we read, that the sea encroached on some occasions to the walls of Madura.

The Sanskrit name of this Manaluru is Manipura, and as such it was the capital of the ancient Pandya kingdom. Kulasekhara Pandya is mentioned both in Tamil and Telugu records as the founder of Manipura, which was otherwise known by the name of Manaluru. The local traditions all coincide on this point. Manipura or Manaluru was the original site of the capital of the Pandya kings, which was afterwards transferred to Madura in its immediate neigh-

²⁰⁴ See Ramayana Kişkindhakanda, LXVII, 40-43.

Áruroba nagatrestham mahendram arimardanab.
 Vicacara harisrestho mahendrasamavikramah.

Thidem, Sundarakanda, I, 15, 213, 214.

Ramayanasangraha, Sundarakanda, I, 1.

Tato Mahendrasikharat utplutya Hanuman bali surasasimhike bhittva Lahkabahiravatarat.
 Mahanataka, Sundarakanda, I, 14, 15, 126, 127.

bourhood.²⁰⁵ In some chronicles Manipura is also called Kalyāṇapura; the proposed identification of Kalyāṇapura with Kurkhi is quite without foundation.

Occasional excavations round Manaluru have brought to light substantial evidences of ancient structures, especially in the fields of Manaluru Cintamani, midway between the present Manaluru and Madura; old coins and ancient gold ornaments have also been found there in quantities. The neighbouring country round Manaluru stands among the natives in the reputation of containing many hidden treasures, and people often try to find them by means of the wand.

It is a most important coincidence that in some old MSS. of the Mahabhārata, instead of the name Manipura, the chapters of the Asyamedha, which should contain it, give actually the name Manaluru.²⁰⁶

In the "Oriental Historical Manuscripts" of the Rev. Mr. Taylor occurs, instead of Manalūru the name Manavūru, but from further evidence given by Mr. Taylor himself, both names apply to one and the same place. ** In some chronicles Madura is substituted for Manipura, and Arjuna is said to have married the daughter of the Pändya king of Madura. **

²⁰⁵ See Tamil Kadjan MS. No. 2327 in the Government Orient. MSS. Library ibidem, Local Records XLVII, 105: "Madhurasampamandunna Manjpuram anaga Manaluru candravamsam Kulasekharapanjudu rajyaparipalana, samv. 4,100." According to some Kulasekhara himself transferred the capital from Manjpura to Madura.

²⁰⁶ See Afvamedha, LXI, 1—3; LXVII, 1; LXVIII, 1; LXIX, 1. LXI. 1. Kramena saha yastvevam vicaran Bharatarsabha

Mopolifrupaterdešam upayat saha Pandavaih.

2. Śrutys tu urpatirviram pitaram Babhruvshanah

niryayan vinayenaryo brahmanarghyapurassarah.

^{3.} Mopolüresvaram caivam upsyantam dhanañjayah.

LXVII. 1. Putrastasya mahabhago Maneldreivaro yuva. LXVIII. 1. Prayopavisje nrpatau Moneldreivare tatha.

LXIX. 1. Kim agamanakṛtyam te Kauravyakulanandinī Massalīrupatestasya tathaiva caraṇājire.

³⁶ Oriental Historical Manuscripts, by William Taylor, Missionary, I, 13, 57, 120.

²⁰⁰ Bee Ibidam, p. 122.

The adventures of Arjuna during his exile have always been a subject of great interest among the Indians, and many of his exploits have gained for him a favorite place among the Pandava heroes.

Especially his journey to Manipura has been largely commented upon, as through his stay at that place and his marriage with the crown-princess Citrangada, the family of the Pandyas became united with that of the Pandavas.

Citravahana and his grandson Babhruvahana are frequently mentioned as Pandyas as well in old as in more modern records, and on this point they are unanimous. Mr. Nelson, the able compiler of the Manual of the Madura District, is by far too positive, when he says that in the Mahabharata no mention is made of Arjuna having married a Pandya princess; for there exist copies which contain such an account.²⁰⁹

The fame and power of the Pandavas must have spread all over India and beyond it, for the conqueror of Ceylon, Vijaya, belongs also to this family.

Whether the connection of the Pandyas with the Pandavas was a real one, or whether it was only assumed by the former to invest themselves with greater authority and to raise their position in the eyes of the people is now difficult to find out, but the belief in such connection is a matter of fact.

According to a chronicle quoted by Mr. Taylor the Pandya kings were descended from Yayati, the son of Nahusa. Yayati had two sons by Devayani, the daughter of Usanas, Yadu and Turvasa (Turvasu). "The younger brother of Yadu (i.e., Turvasa,) was the first Pandian. The place of his reigning was Manalur. Among those of this race, one, named Kulaseghara Pandian, by the favor of Siva, out down a forest of Kadambu trees, and built a town called Madura, where he lived."210

See Manual of the Madura District, by J. H. Nelson, M.A., III, 49.
 See Oriental Historical Manuscripts. I. 120.

We thus see, if the legend just narrated rests on any authority, that Manipura or Manaluru through its king, who was a son of daughter of Sukra, is connected with Sukracarya,—the presumed author of the Sukraniti, and the expounder of the fabrication of gunpowder and the construction and handling of guns,—is the same Manipura, of which we have read in the Mahabharata, that it was provided with firearms and guns against the attack of its enemies. If Manipura is the place which corresponds to the site of Manipura (Manaluru) near Madura, a great many otherwise inexplicable contradictions are easily solved.

The affection with which the Pandavas are remembered in India, and especially in the South, seems to me not only due to the interest which the story of their sufferings, their bravery, and final victory excited everywhere, but also to some cause by which their memory was effectually kept alive.

There are no monuments of great antiquity in Southern India, especially on the Eastern Coast, with which legendary lore does not somehow connect the name of the Pandavas. Thus we observe that their name is associated with the rock-cut caves in Mamandur near Conjeveram, and the same occurs in many other places, perhaps also at the rock temples of Kalugumalai.

The famous Seven Pagodas near Madras, whose carvings are celebrated all over India, do not form an exception to this rule. The monoliths representing rathas (cars) or shrines named after Dharmaraja, Bhīma, Arjuna, Nakula and Sahadeva, and even to Draupadī, are among the most ancient of the carvings Arjuna especially is a favorite; there are two rathas named after him, though one of them contains now an image of Ganesa, and the most splendid carving, of which there exist also two copies, though one is in an incomplete state, is called Arjuna's penance. We must not forget that Arjuna is the presumed ancestor of the Pandyas.

I believe that these and other such carvings originated with the Pandya princes, who, by honoring their ancestors, conferred still greater distinction on themselves. A reigning dynasty alone could have undertaken the construction of such works. The assumption that these carvings originated with the Pandyas, under whose sway for some time the whole Eastern Coast remained, does not contradict any historical statement especially as the reign of the Pandya kings extended over a long period.

The execution of these sculptures is generally ascribed to the architectural energy of Buddhists and Jains, but there is nothing against the assumption that the Pandyas may have once also followed the religious tenets of the Buddhists and Jains and supported their co-religionists in the same manner in the South as the Maurya Kings of Pataliputra did in the North.

If this hypothesis can be proved to rest on historical evidence, we shall perhaps be able to settle before long the date of the construction of these rock carvings in a more satisfactory n unner than has been done up to this day.

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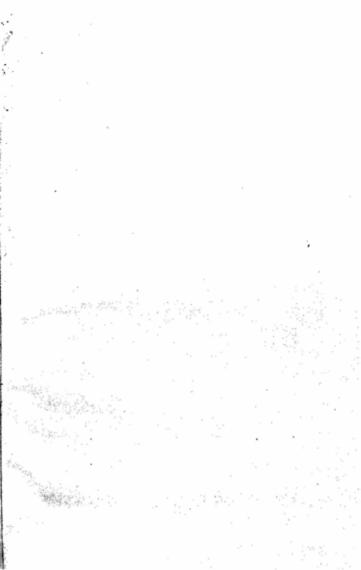
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